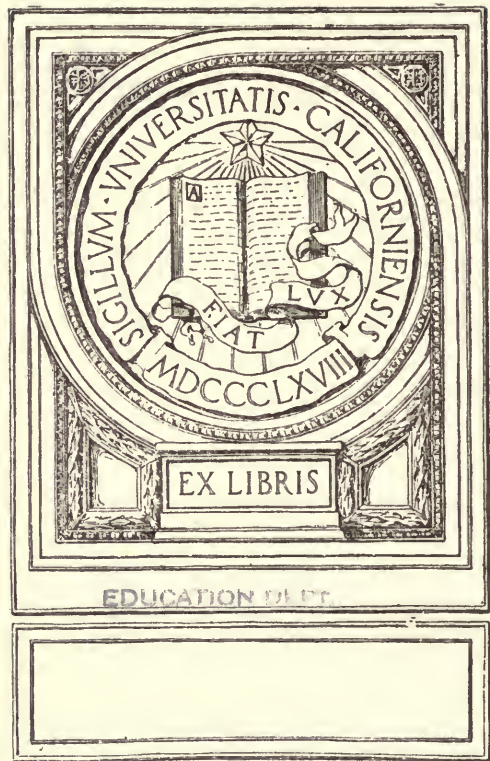# FAMILY EXPENSE ACCOUNT

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BROOKMAN

D. C. HEATH & COMPANY

FAMILY EXPENSE ACCOUNT

INCLUDING PROBLEMS OF
INVESTMENT AND EXPENDITURE

BY

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PREFACE

THIS book has been written with two purposes in view : (1) to teach the "mathematics of money" underlying the simpler processes of investment and expenditure, and (2) to solve a series of problems such as usually arise in the families of those living on small salaries.

Experience in teaching the book has shown that pupils appreciate the problems which occur in connection with home life and exercise more judgment and accuracy in their solution than in those which occur in the usual text-book on arithmetic. For younger pupils the work in cross addition, cash accounts, and bank accounts develops skill in handling such sums of money as occur in daily life and gives practice in the use of business forms demanding neatness and common sense. For older pupils, the work in personal and other accounts, payments on the house, mortgages, and insurance exercises their reasoning powers upon problems of daily life. By following the financial history of a family the pupils develop an interest in its welfare which results in increased time devoted to arithmetic in order to find how the family fared.

The work in insurance has been presented in simple form for the express purpose of ridding it of imaginary obscurities and revealing it as the safeguard of the modern home.

Experience has further shown that the book offers a wide range of discipline in self-control. The tendency of the age to live up to and beyond the limit of income for the sake of making undue display diverts attention from the very real problems which arise in homes whose maximum earnings are $1200 a year. For this reason the Family Expense Account follows the fortunes of a family living upon a small salary. The difficulties which occur are solved in

terms of the home which desires the utmost for its children in their larger life both to-day and to-morrow.

The details of daily expenditure for dress, pocket money, amusements, etc., develop questions of ethics which can only be solved by recognizing the advantages of simplicity regardless of one's neighbors' standards, and emphasize the honesty of living within one's income. In the famous words of Mr. Micawber : " Annual income twenty pounds, annual expenditure nineteen pounds, nineteen shillings and six-pence, result, happiness ; annual income twenty pounds, annual expenditure twenty pounds and six-pence, result, misery ! "

OAKLAND, CALIFORNIA,
    June 19, 1914.

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INTRODUCTION

THIS book contains the family expense accounts of Mr. and Mrs. Frank Woodward, who were married in Berkeley, California, in November, 1900, and started housekeeping on December first. Mr. Woodward was earning $75 a month as a bookkeeper in a hardware store in San Francisco.

At the time of their marriage, the family bought the furniture for a four-room flat, but had no cash in reserve. They decided to devote their savings to the purchase of their own home, but at the same time to spend a reasonable amount upon books, vacations, concerts, etc., and to give steady support to church and charity.

The financial story of fourteen years of their married life is told in the following pages. The problems concerning the investment and expenditure of their salary are those commonly met at the present time. Pupils should study the book, not only to gain skill in handling money, but also to gain self-control while solving similar problems which may occur in their own home life.

FAMILY EXPENSE ACCOUNT

First Year — 1901

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. Household: 1. Rent	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
2. Electric Light	1.20	1.15	1.25	1.05	1.00	1.00	1.00	1.00	1.40	1.70	2.00	2.20
3. Gas	2.25	2.05	2.10	2.10	2.15	2.10	2.00	2.15	1.75	2.40	2.70	2.90
4. Fuel	1.50							5.00				
5. Garbage	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
6. Help ($1.25 a day)	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	1.25	2.50	2.50	2.50
7. Laundry	.75	.75	.75	.75	.75	.75	.75	.75	.40	.75	.75	.75
8. Furnishings	9.66	.15	.10	1.65	.50	.85	.45	1.10	.30	2.55	1.40	1.72
II. Food: 9. Food	22.45	20.45	22.00	21.75	22.30	21.15	21.40	22.42	22.75	21.43	21.16	22.14
III. Family: 10. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00
11. Health	.15	.45	.65	1.25	1.05	3.10	1.00	.85	1.30	.25	.25	.45
12. Accident Insurance		15.00										
13. Incidentals	3.05	.50	.35	1.25	.95	1.15	.85	1.10	1.40	2.70	3.10	4.25
14. Education	.75	.75	3.75	.75	.75	.75	.75	.75	.75	.75	.75	2.75
15. Recreation			Magazine			.50		5.00 (Vacation)				1.50 (Xmas)
IV. Religion: 16. Church and Charity	1.00	1.00	1.00	3.00 (Charity)	1.00	1.00	1.00	1.00	1.00	1.00	4.00 (Charity)	2.00
V. Personal: 17. Clothing		.35	.15	.70	1.25	3.50	4.17	.85	1.50	16.00	2.45	2.10
18. Pocket Money	4.00	2.00	4.00	4.00	4.00	4.00	2.00	4.00	4.00	2.00	2.00	4.00
VI. Savings: 19. Savings Bank			15.00	15.00	15.00	12.00	15.00	12.00	10.00	5.00	12.00	5.00
20. Life Insurance	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68

Salary, $75 a month. Two weeks' vacation, with pay, in August, spent camping in the hills.

CROSS ADDITION

The opposite page shows the expenses of the Woodward family during their first year. Each column shows the bills that were paid and the savings that were deposited on the first of the month. It is most important to find the correct amount of money spent. This is done by adding the twelve columns, January, February, etc., to find the total expenditure for each month; and also by adding twenty rows — rent, light, etc., — to find the total expenditure for each item. The total for each column and each row should be recorded in a blank similar to the accompanying.

Add the expenditures for the twelve months to find the expenses for the year. Add the totals for each item to find the annual expense for that item. If the work is done correctly, the total expense by columns will give the same result as the total expense by rows. Why?

This method of securing correct results by adding by columns and by rows is called *cross addition*. In adding by columns, cover with blank paper everything except the column to be added. *Use no scratch paper*, in order to secure speed and to avoid errors in copying. In adding by rows cover everything on the printed page except the row to be added. Add from left to right, first the cents, next the dimes, etc. Do not copy the amounts to be added on another paper, since adding by rows is intended to give a quick method of testing the accuracy of adding by columns.

COLUMNS		ROWS	
Jan.	$70.17	1	$180.
Feb.		2	
Mar.		3	
Apr.		4	
May		5	
June		6	
July		7	
Aug.		8	
Sept.		9	
Oct.		10	
Nov.		11	
Dec.		12	
Total		13	
		14	
		15	
		16	
		17	
		18	
		19	
		20	
		Total	

PROBLEM. — Find the monthly expenses for the first year and the total expense. Verify by adding the expenses by items and show that their total is the same as the total of the monthly expenses.

HOUSE FURNISHING

QUESTIONS. 1. The bills received January 1 showed that Mr. and Mrs. Woodward spent $9.66 in house furnishing. Most of this money was spent in buying kitchen equipment. Make out in businesslike form a bill of the articles they might have bought, using local prices. Make the local discount for cash and receipt the bill.

2. Obtain from the furniture stores prices of furniture which might be bought for a four-room flat. Make an estimate which comes within $75.

3. What unusual expenses occurred in August and October? How did these expenses affect the savings bank deposits?

4. What unusual item prevented the family from depositing money in the savings bank on February 1? Why was it advisable to pay $15 for accident insurance instead of putting this money in the bank?

5. What items in this Expense Account do not occur in your own home? Why? What items in your own home do not occur in the Expense Account for the first year?

6. A sewing machine cost $35 in cash or could be bought on the installment plan by paying $2.50 a month for a year and a half. How much more expensive was the latter method?

7. Find the advantage in buying a dining-room table and chairs for cash instead of buying them on the installment plan.

FAMILY EXPENSE ACCOUNT

SECOND YEAR — 1902

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. *Household:*	1. Rent	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	2. Electric Light	2.15	2.10	2.00	1.80	1.80	1.50	1.50	1.50	1.25	1.90	2.00	2.10
	3. Gas	3.10	2.95	3.05	3.00	2.80	2.95	2.80	1.80	2.10	3.05	3.50	3.50
	4. Fuel								5.00				
	5. Garbage	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
	6. Help ($1.25 a day)	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2 50	25.00
	7. Laundry	.75	.75	.75	.75	.75	.75	.75	.75	.75	2.00	.75	.75
	8. Furnishings	.85	.45	.70	1.05	.45	3.00	1.50	2.10	3.45	14.20	12.25	3.50
II. *Food:*	9. Food	21.80	22.10	21.95	23.00	21.16	22.30	20.05	21.85	24.60	22.10	30.10	27.50
III. *Family:*	10. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00	4.00
	11. Health	.15	.65	.55	.25	.15	.40	.55	1.20	1.10	.60	5.05	110.00
	12. Accident Insurance		15.00										
	13. Incidentals	.40	2.35	1.35	.55	1.05	1.50	2.05	.65	1.85	5.10	3.25	2.05
	14. Education	.75	.75	.75	.75	.75	2.75	.75	1.75	.75	.75	.75	.75
	15. Recreation		.50		.50		.50			14.00 Vacation			2.00
IV. *Religion:*	16. Church and Charity	1.00	1.00	1.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00	Thkgvg. 2.50	Xmas 1.00
V. *Personal:*	17. Clothing	.30	2.25	1.50	.40	.75	.50	3.00	4.00	2.50	3.00	1.50	.75
	18. Pocket Money	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	19. Savings Bank	10.00		20.00	15.00	22.00	18.00	18.00	15.00				
	20. Life Insurance	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68

Salary, $80 a month. Two weeks' vacation with pay in August. Bank withdrawal, $120, December 2, 1902. Eldest son, Roland Woodward, born Oct. 30, 1902.

CASH BALANCE

1901	On Hand	Expenses	Cash Balance
Jan.	$75.00	$70.17	$4.83
Feb.	79.83	?	?
Mar.	?	?	?

1902	I On Hand	II Expenses by Months	III Cash Balance	IV Expenses by Items
Jan.	?	?	?	1
Feb.				2
Mar.				3
Apr.				4
May				5
June				6
July				7
Aug.				8
Sept.				9
Oct.				10
Nov.				11
Dec.				12
				13
				14
				15
				16
				17
				18
				19
				20
		Total		*Total*

In 1902, Mr. Woodward's salary was raised $5.00 a month, so that on January 1 he received $80 a month. This increase must be considered when finding the "cash balance," or the amount of cash remaining in the purse after all bills are paid. Thus, on January 1, 1901, Mr. Woodward received $75. With this money he paid bills amounting to $70.17. The money left in his purse, or his "cash balance," was therefore $4.83. Why?

On February 1, 1901, Mr. Woodward had on hand $79.83, composed of $4.83 in cash and $75 in salary. Subtract from this the expenses paid February 1 to find the amount of money that he had left.

PROBLEM 1. — Find the cash balance for each month of the first year by completing a table similar to the first of the accompanying.

PROBLEM 2. — Find by cross addition the expenses by months and items for the years 1902 to 1905 inclusive, by completing columns II and IV in the accompanying table. Make neat, legible figures.

PROBLEM 3. — Find by subtracting the monthly expenses from the amount on hand, the cash balance for each month of the years 1902 to 1905 inclusive, by completing columns I and III in the accompanying table. Remember that on Jan. 1, 1902, the amount on hand is composed of $80 in salary and the cash balance on Dec. 31, 1901. Remember also that beginning with Jan. 1, 1902, the salary was $80 a month. On November 1, 1902, the family drew $120 from the bank. This money must therefore be included in the amount on hand.

QUESTIONS. 1. On February 1, 1901, Mr. Woodward found that his cash balance should be $4.83. How was this balance found? Suppose that at this time he found in his purse only $3.89, what would he know concerning the accuracy with which he had kept his accounts? How much must then be entered as "unaccounted for" in his January expenses? The skill of any one who keeps accounts is shown if the amount of money in his purse agrees with the amount found by subtracting his expenses from his money on hand. If these amounts agree, how much must he enter as "unaccounted for"?

POCKET MONEY

2. After looking over their first year's expenses, Mr. and Mrs. Woodward decided to reduce their pocket money. Find in the following list of items those which could be omitted altogether and those which could be reduced, but not omitted. What other items could also be reduced?

Tobacco, moving picture shows, haircuts, candy, gum, perfume, ice cream sodas, carfare, face powder, theatres, peanuts, picnics.

3. Find the smallest amount of pocket money that you would spend if you desired to save as much money as possible. On what items would you spend it? What items could you omit? For what objects would it be worth while to reduce the amount of pocket money spent?

PERSONAL ACCOUNTS

4. Personal expenses for a single person may be kept with the following abbreviations:

B, board; L, living expenses (telephones, laundry, etc.); T, traveling expenses; C, clothing; H, health; R, recreation (itemize to avoid extravagance); E, education; A, acquaintances; F, family (itemize large contributions); X, church and charity (itemize to promote regularity); I, investments.

(The first three items in the left column are recorded only when opening an account.)

PERSONAL ACCOUNT

RECEIPTS		EXPENSES		
Items	Received	Date	Items	Paid
Balance in savings bank	$472.40	Dec. 31. '14	C.	$ .65
Balance in checking account	15.42		F. (chair, check No. 59). . . .	10.00
Cash on hand	2.35		R. (Melba)	1.50
Interest on savings (left in bank)	12.11	Jan. 2. '15	B. (to Feb. 1, check No. 60) . .	30.00
Salary (deposited $50 in savings, $60 in checking acc't, cash, $10)	120.		X. (Associated charities No. 61).	5.00

5. Find the balance in the savings bank, in the checking account, and the amount of cash on hand Jan. 3, 1915.

FAMILY EXPENSE ACCOUNT

THIRD YEAR — 1903

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. *Household :*	1. Rent	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	2. Electric Light . .	2.30	2.40	2.20	2.05	2.00	1.90	1.90	1.70	1.25	1.90	2.15	2.40
	3. Gas	3.10	2.80	2.65	2.80	2.90	2.95	2.80	2.80	2.50	2.90	3.10	3.20
	4. Fuel	4.00						4.00					
	5. Garbage	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
	6. Help ($ 1.25 a day) . .	15.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	1.25	2.50	2.50	2.50
	7. Laundry	.75	.75	.75	.75	.75	.75	.75	.75	.40	.75	.75	.75
	8. Furnishings . . .	4 45	3.95	2.10	2.30	1.50	.85	.65	1.10	.70	.90	1.40	2.05
II. *Food :*	9. Meat	4.50	3.75	3.80	3.50	3.70	3.45	3.90	3.85	4.10	3.50	3.90	4.20
	10. Fruit and Vegetables . . .	2.15	3.25	3.55	3.25	4.00	3.45	4.20	4.30	4.45	3.10	3.20	3.45
	11. Milk and Butter . .	3.60	3.60	3.65	3.35	3.40	3.70	3.65	3.50	3.70	3.65	3.90	3.90
	12. Groceries	12.38	11.50	13.15	10.05	14.95	10.45	11.75	10.35	13.25	10.40	13.25	12.05
III. *Family Expenses :*	13. Total	5.20	Acc. Ins. 22.05	6.05	5.30	5.75	6.40	7.00	5.30	Vacation 20.05	9.30	8.50	6.80
IV. *Religion :*	14. Church and Charity	1.00	1.00	1.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00
V. *Personal :*	15. Clothing	15.00	2.35	1.40	5.40	3.25	18.00	1.25	3.10	1.50	2.05	1.80	3.15
	16. Pocket Money . .	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings :*	17. Savings Bank . .			15.00	15.00	15.00	5.00	14.00	20.00	5.00	20.00	14.00	14.00
	18. Life Insurance . .	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68

Salary, $ 80 a month. Vacation in August.

CASH ACCOUNT BOOK

To reduce their bookkeeping to the simplest form possible, Mr. and Mrs. Woodward decided to keep accounts at a few stores and pay their bills there by checks on the first of each month in order to avoid spending a large amount of cash unconsciously. By this means they could keep a record of large items and only needed, besides their check book, a daily account of those purchases for which they paid cash. By comparing the balance in the account book each night with the money in the purse, they had an exact record of each cash item. At the end of the month, the items in the check book, combined with those in the cash account, were added and entered in the Family Expense Account, as on the preceding page.

PROBLEM 1. — The family cash account for one week showed the following items. Enter in a form similar to the accompanying, and find the cash balance for each day.

Mon. Jan. 9 — Cash in purse, $3.40; Absorbent cotton, $.10; Pencil, $.05. *Tues.* — Sold rags, $.15; Writing paper, $.20; Nozzle for hose, $.35. *Wed.* — Received for piano lessons, $2.50; Repairing shoes, $.90. *Thurs.* — Umbrella, $2; Rubbers, $.75. *Fri.* — Barber, $.35. *Sat.* — Glasses repaired, $.70; Electric iron repaired, $.30.

PROBLEM 2. — Make out a similar account for one week of the cash expenditures of your own home and find the balance for each day.

CASH ACCOUNT

DATE	PARTICULARS	REC'D	PAID
Mon. Jan. 2	On Hand 1 doz. Oranges Stamps	$5.00	$ .20 .10
	Total	5.00	.30
Tues. Jan. 3	Cash Balance Bottles Sold Paring Knife	4.70 .25	.20
	Total	4.95	.20
Wed. Jan. 4	Cash Balance Garbage	4.75	.25

BUYING FOOD

During their third year, Mr. and Mrs. Woodward tried to reduce the cost of food by buying in large quantities. They found that on a large scale this required more space for storage than they had in their present home. They therefore decided to move and also to start a garden as soon as possible. They then found that when they bought much of any article they were more extravagant in its use and wasted the profit that they had made. They finally decided to buy groceries in large quantities, and to measure out a week's supply and live within this allowance. They distributed their purchases so that they bought a large order of one commodity every two months: January, soap and laundry supplies; March, sugar for preserving; May, potatoes; July, fuel (brought from the mountains in coöperation with the neighbors); September, dried fruit; November, canned goods.

QUESTIONS. 1. Find the total cost of food in your own family for one month, classified as in items 9, 10, 11, 12 on the following page, and thus find the average cost of food per person per month.

2. Use local prices to find the cost of wasting half a cup of butter a day.

3. Compare the cost of a roast of meat which can be served for four meals, with the cost of buying different meats, steak, chops, etc., for each of the four meals.

4. If sugar is bought by the barrel in March, and the family already has fruit jars, use local prices to find the difference in expense between buying two dozen pint jars of canned blackberries and between preserving them at home. Find the cost of labor per hour, include this in the bill for fruit canned at home, and again compare the difference in cost.

5. Use local prices to find the difference in cost between buying bread at the bakery and making it at home; include the cost of labor in the bill for home-made bread.

FAMILY EXPENSE ACCOUNT

Fourth Year — 1904

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. *Household:*	1. Rent	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	2. Electric Light . .	2.50	2.40	2.40	2.30	1.10	1.40	1.20	1.10	1.00	2.00	2.40	2.25
	3. Gas	2.90	2.75	2.70	2.40	3.00	2.85	2.00	2.00	1.50	2.50	2.85	3.10
	4. Fuel							10.00					
	5. Garbage	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
	6. Help ($ 1.25 a day) .	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	1.25	2.50	2.50	2.50
	7. Laundry	.75	.75	.75	.75	.75	.75	.75	.75	.40	.75	.75	.75
	8. Furnishings . . .	3.15	1.25	7.40	12.65 New rug	4.65	2.50	7.65	4.22	1.40	2.90	3.60	3.15
II. *Food:*	9. Food	22.30	22.05	21.75	22.65	22.70	20.60	20.40	21.30	20.40	23.50	24.10	23.95
III. *Family:*	10. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00
	11. Health	.25	.65	6.05	2.85	1.30	.10	1.95	1.85	.95	1.40	2.10	3.05
	12. Accident Insurance	Moving	15.00	Seeds									
	13. Incidentals . . .	18.00	1.05	4.10	3.25	2.40	2.65	1.10	3.40	2.50	1.50	3.15	2.75
	14. Education . . .	1.50	.75	.75	.95	1.10	.85	2.50	.75	.75	.75	1.25	2.00
	15. Recreation . . .				.50	1.00	.50	.50	.50	12.00 Vacation	.50	.60	2.00
IV. *Religion:*	16. Church and Charity	1.50	1.50	1.50	5.00	1.50	1.50	1.50	1.50	1.50	1.50	3.00	2.00
V. *Personal:*	17. Clothing	1.10	.15	3.19	4.25	10.25	15.60	3.40	5.90	2.10	3.15	16.00	12.65
	18. Pocket Money . .	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	19. Savings Bank . .	6.00	9.00	10.00		8.00	8.00	5.00	15.00	15.00	15.00		
	20. Life Insurance . .	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $ 85 a month.   Moved January 1 to cottage with garden.

CHECKS AND STUBS

[See also page 17.]

Mr. and Mrs. Woodward planned to pay as many of their bills as possible on the first of the month by checks. This meant that they kept two kinds of accounts at the bank, the savings bank account (explained later), and a checking (commercial) account. They opened a checking account by depositing a certain amount of money in the bank and receiving a check book filled with blank checks and stubs. The stub of a check is the piece of paper which remains in the book after the check is torn out and which shows how much money the check is made out for and how much money remains in the bank. When the stubs are kept correctly, they form an account book from which the monthly expenses paid by check can be recorded. Suppose that Mr. Woodward had $100 in his checking account on January 1, 1904. If he had used 60 checks before this time, his first check in January would be No. 61, and the stub would be filled out as in the accompanying blank. In check No. 62, why would the balance brought forward on the stub be $85?

No. *61* $ *15*

Jan. 2, 1904

To_____ *Lawrence & Brown*

For_____ *House rent*

Bal. Brought Forward Amount deposited	$100	
Total	100	
Amount this check	15	
Balance	85	

PROBLEM 1. — Find the amount in the budget, and make out the stub of check No. 62 for the electric light bill due Jan. 1, 1904. What balance is brought forward to the stub of check No. 63?

PROBLEM 2. — Use the correct and constantly decreasing balance in making out the stubs of the following checks for the bills paid Jan. 1, 1904: No. 61, Rent; No. 62, Electric light; No. 63, Gas; No. 64, Help; No. 65, Laundry; No. 66, Furnishings (use name of a local hardware store). Find the balance left in the checking account after these bills are paid.

PROBLEM 3. — Get a check book from the bank and make out the correct stubs for bills paid in your own home on the first of the month for the same items as above. Find the remaining balance. Explain why it is the height of folly to make out a check without making out the stub.

MOVING AND INCIDENTALS

QUESTIONS. — 1. On Jan. 1, 1904, the Woodward family moved to a cottage for which they paid $15, including water. The deposits on their gas and electric meters were transferred without extra expense. The plumber's bill for connecting the stove was $3.50, and the moving bill was $15. Among the extra furnishings required for the new home were the following. Find the local prices for these and the total expense: One $5''$ pipe collar; 6 screw hooks and eyes; 3 washers; $\frac{1}{2}$ pt. wood dye; damper; monkey wrench; 1 gal. floor paint; 2 window shades, $30''$ wide, 5 ft. long; dustless mop; 4 casters; putty; glazier's points; 1 piece glass, $14\frac{3}{4}'' \times 18''$; 1 piece, $26'' \times 27''$; for window screens, 17 ft. of $30''$ screen, 1 package $\frac{5}{8}$ brads; plane, $2.

2. At the end of the year the family discovered that although they had been receiving a larger salary than before, they had been putting less money in the savings bank. What large items of expense did they find in January, April, May, June, September, November, and

December? They decided to watch their expenditures for house furnishing and incidentals, and, if possible, to reduce these items during the next year. Find the total cost of the following furnishings and incidentals, and show wherein savings could be effected: Films and printing, $.95; gas stove, $2.25; curtains, $.60; crockery, $3.30; table cloth, $2.; desk fixtures, $.50; watch repairing, $1.50; plumbing, $7.50; electric battery, $.35; electric light, $.50; saws filed, $.75.

3. Keep a list of house furnishings and incidental expenses in your own home for one month, and see what fraction they form of the entire outlay.

GARDEN ACCOUNT

In 1904, Mr. and Mrs. Woodward started a garden in which they grew flowers, beans, potatoes, blackberries, loganberries, raspberries, and strawberries. In October they planted bulbs. The garden yielded fruit and vegetables, as follows : July, $5; August, $7; Sept., $3. Notice how the food bill is diminished on account of the profit made from the garden. Make out an account for the garden similar to the account for chickens on page 56, and insert reasonable prices to show its expenses and profits.

PROBLEM 4. — In a garden 40 ft. square, the annual expenses were as follows : Seed, $2 ; fertilizer, $1 ; labor, $10 ; extra water, $2. During the winter the returns from lettuce, radishes, beets, onions, peas, and potatoes were $22.50. The corn crop was a failure. The garden yielded other vegetables from April until October and potatoes throughout the winter. Find the average profit per month.

PROBLEM 5. — Keep an account of your own garden to find its monthly profit for a year. What other advantages arise from keeping a garden?

FAMILY EXPENSE ACCOUNT

Fifth Year — 1905

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. Household:	1. Rent	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	2. Electric Light	2.20	2.15	2.25	3.25	3.15	2.40	2.10	1.75	1.25	1.95	2.05	2.15
	3. Gas	2.85	2.90	2.95	3.50	4.00	3.50	3.25	3.10	2.10	2.50	2.80	2.95
	4. Fuel			5.00				10.00					
	5. Garbage	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
	6. Help (at $1.25 a day)	2.50	2.50	2.50	15.00	25.00	2.50	2.50	2.50	1.25	2.50	2.50	2.50
	7. Laundry	.75	.75	.75	.75	.75	.75	.75	.75	.75	.75	.75	.75
	8. Furnishings	1.25	2.75	1.65	12.25 Linen	3.10	2.85	1.50	1.00	1.25	2.70	3.19	2.10
II. Food:	9. Food	24.05	23.85	24.10	31.60	35.47	27.40	22.20	21.10	25.14	26.14	25.10	24.00
III. Family:	10. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	11. Health	.35	.70	.53	6.25	110.00	1.10	1.15	.95	.72	.47	2.05	1.50
	12. Accident Insurance		15.00	Linen									
	13. Incidentals	.48	.97	7.04	3.05	2.85	2.40	1.80	2.15	1.16	2.27	3.05	1.05
	14. Education	.75	.75	.75	.75	.95	.75	.75	.75	.75	.75	.75	.75
	15. Recreation	.15	.10	.20			.30	.20	.50	.30	1.00	.50	2.50
IV. Religion:	16. Church and Charity	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	3.00	1.50
V. Personal:	17. Clothing	13.50	1.05	4.10	6.05	3.20	5.00	12.00	6.00	15.00	10.27	5.20	4.10
	18. Pocket Money	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. Savings:	19. Savings Bank	8.00					10.00		15.00	20.00	8.00	9.00	14.00
	20. Life Insurance	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $85 a month.   Eldest daughter, Frances Woodward, born March 16, 1905.
Bank withdrawal, $140, May 1, 1905.

MAKING OUT CHECKS

A check is a slip of paper printed about as the accompanying. To draw a check it is necessary to write (1) the date, (2) No. of check, (3) person in whose favor it is made out,

---

BERKELEY, CAL._____191___ No._____

THE FIRST NATIONAL BANK
OF BERKELEY, CAL.

PAY TO THE
ORDER OF_____ $_____

_____DOLLARS

---

(4) amount of check in figures, (5) amount of check in words, (6) signature of person making out the check. Find the place where each of these items should be written in the above check.

When you have made out a check to Lawrence & Brown for $10.25, house rent, and have signed your name, they can send the check to the bank and receive $10.25. But if you have signed the check when you had no money in the bank, you can be put into prison. It becomes necessary, therefore, never to sign a check, even in practice, if you have no money in the bank,

unless the word *Void* is written prominently across the writing on the check. The most important word that any person writes is his signature. He cannot be too careful how he safeguards this. *Never sign any paper which you do not thoroughly understand.* Each person should adopt a practical business signature which includes the name by which he is generally known and the initials of his other names. This signature he should not vary when signing business papers. It should always be written legibly in ink or indelible pencil. Why?

BERKELEY, CAL._____ *Jan. 2*_____ 190 *4* No.__ *61*_____

THE FIRST NATIONAL BANK
OF BERKELEY, CAL.

PAY TO THE
    ORDER OF_____ *Lawrence & Brown*_____ $ *10.*$\frac{25}{100}$_____

Ten and $\frac{25}{100}$ ~~~~~~DOLLARS

_____ *John Doe*_____

A number of cautions should always be observed in writing checks.

1. In writing the amount of the check in numbers, place the left number close to the dollar mark, otherwise the amount of the check might be raised. If a check for ten dollars is written $ 10.$\frac{No}{100}$ instead of $10.$\frac{No}{100}$, it is possible for a thief to insert another number between the $ sign and the number, as $710, and the signer of the check might lose $700. Why?

2. Place the numbers that show the amount of the check close together to prevent some one else from inserting a number between them. A check for ten dollars must be written $10.$\frac{No}{100}$ and not $1 0.$\frac{No}{100}$, as in the latter case the number 7 might be inserted so that the check would read $170.$\frac{No}{100}$. How much money might the signer then lose?

3. Make a dash immediately after the last number of dollars to prevent a number being inserted before the cents. A check for ten dollars must be written $10 — and not $10 — as in the latter case, the zero might be inserted so that the check would read $100—. How much money might the signer then lose?

4. In writing the amount of the check in numbers, make the dash immediately after the last figure in the number of dollars, and write the number of cents in small numbers above the dash; write 100 below the dash. If the check is for an exact number of dollars, write *No* above the dash and 100 below; as $5.$\frac{No}{100}$.

5. In writing the amount of the check in words, begin at the extreme left end of the line to avoid any one else's raising the amount of the check. If a check for five dollars is written

Five and $\frac{No}{100}$ Dollars, the word *Sixty* might be inserted thus:

Sixty-Five and $\frac{No}{100}$ Dollars. How much money might the signer of the check lose?

The check should be written correctly thus:

Five and $\frac{No}{100}$_____Dollars.

6. In writing the amount of the check in words, the word *and* should be written immediately after the number of dollars in the check. If a space is left before the word *and*, the amount of the check might be raised. Thus:

Seven   and $\frac{No}{100}$_____Dollars might be raised to *Seventy and* $\frac{No}{100}$_____Dollars.

How much money might the signer of the check lose? The check should be written correctly, thus, *Seven and* $\frac{No}{100}$ ------------ Dollars.

7. In writing the amount of the check in words, if it is for an exact number of dollars, write $\frac{No}{100}$ after the word *and*, and leave no space between. What two safeguards does this insure?

8. After writing in words the number of dollars in the check, and in figures the cents in the check, draw a line from this amount to the word *Dollars*. Why?

The preceding cautions are necessary, because a check is an order to pay money, and the person who orders payment must be sure that he protects himself in every way possible from paying an amount that he did not intend. The check and stub for the electric light bill for Jan. 1, 1904, would read as shown at the top of p. 21.

PROBLEM 1. — Suppose that Mr. Woodward has $95 in his checking account on Feb. 1, 1905, and has already issued 123 checks. Make out stubs and checks for each of the following bills, paid Feb. 1, in the following order. Use the names of local firms and write the word *Void* across the face of each check: 1, Rent; 2, electric light; 3, gas; 4, help; 5, laundry; 6, furnishings; 7, meat; 8, fruit and vegetables; 9, milk and butter; 10, groceries; 11, drug store; 12, accident insurance; 13, newspaper; 14, church; 15, clothing; 16, life insurance.

PROBLEM 2. — Make out a similar series of checks and stubs (see blanks at end of book) using the bills of your own home and the check book of your own bank. Write the word *Void* across the face of each check. Show the checks and stubs to a banker to see if they are correctly made out.

| STUB | CHECK |

STUB

No.__62_____$__2.50_____

_____Jan. 2,_____190_4__

To Berkeley Electric Lighting Co.

For_____elec. light_____

	DOLLARS	CENTS
BAL. BROT. FORD.	85	
AMT. DEPOSITED		
TOTAL	85	
AMT. THIS CHECK	2	50
BALANCE	82	50

CHECK

BERKELEY, CAL.—Jan. 2—190_4_ No._62_

THE FIRST NATIONAL BANK
OF BERKELEY, CAL.

PAY TO THE
ORDER OF_____Berkeley Electric Lighting Co._____$__2.$\frac{50}{100}$__

Two and $\frac{50}{100}$_____DOLLARS

_____John Doe_____

ESTIMATED EXPENSES

Mr. and Mrs. Woodward had been in the habit of spending what seemed a reasonable amount for each item and depositing in the savings bank as much as possible of what was left from each month's expenses. As they looked over their accounts for five years, however, they realized that their savings were not increasing as rapidly as they wished. Because they wanted to own their home, they decided to form an estimate of the amount that they would spend upon each item and compel themselves to live within this amount. They began

to realize that if they saved only what was left after the month's bills were paid, they would spend more than if they decided to set aside a certain definite amount each month. They therefore made up the following estimate of their year's expenses in order to find how much they could save: Rent, $180; electricity, $27; gas, $37; fuel, $15; garbage, $3; help, $30; laundry, $9; furnishings, $50; food, $300; carfare, $48; accident and life insurance, $65.24; incidentals, $30; church and charity, $20; clothing, $100; pocket money, $18. They considered that they could live comfortably within this estimate. When, however, they found the total, they realized that they had only a small sum left and that some of this money would be spent on education, recreation, and health, thus reducing their savings to almost nothing.

QUESTIONS. 1. Find the amount of money that could be devoted annually in the above estimate to education, recreation, and health.

2. The family decided that the most rigid economy was necessary if they were to save money toward buying a home, so looked over the monthly expenses to see which items could not possibly be reduced. Make a list of items 1, 5, 7, 10, 12, 16, 18, 20, and find their total.

3. They decided to cut down the electric light bill to $1.70 a month; gas, $2.80; fuel, $15; education, $.75; food, $22; and furnishings, health, recreation, incidentals, and clothing to a total of $14 between them. If health required a large outlay, then the clothing, furnishing, recreation, and incidentals must be slighted until another month. Find how much the family can deposit in the savings bank each month if they live within this estimate.

4. Read the budget for the sixth year and see how near Mr. and Mrs. Woodward kept to their estimate.

5. Make out estimates for your family expenses on blanks at the end of the book.

FAMILY EXPENSE ACCOUNT
Sixth Year — 1906

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. *Household:*	1. Rent	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	2. Electric Light . .	1.62	1.71	1.53	1.50	1.08	1.08	1.17	1.26	1.53	1.62	1.53	1.71
	3. Gas	2.88	2.63	2.88	2.52	2.07	2.07	2.28	2.43	2.43	2.70	2.52	2.88
	4. Fuel			5.00				10.00					
	5. Garbage . . .	.25	.25	.25	.25	.25	.25	.25	·.25	.25	.25	.25	.25
	6. Help ($2 a day) . .	2.50	2.50	2.50	2.50	1.25		4.00	4.00	4.00	4.00	4.00	4.00
	7. Laundry . . .	.75	.75	.75	.75	.40		1.20	1.20	1.20	1.20	1.20	1.20
	8. Furnishings . . .	.15	.25	4.25	4.00				2.50	3.10	4.11	1.10	2.09
II. *Food:*	9. Food . . ` . .	22.00	22.00	21.10	21.80	19.00	18.00	22.00	21.64	23.35	22.15	23.10	24.00
III. *Family:*	10. Carfare												
	(to San Francisco)	4.00	4.00	4.00	4.00	.50	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	11. Health	.10	.25		3.25	4.10	.27	.40		5.10			1.10
	12. Accident Insurance		15.00										
	13. Incidentals . . .	.15	.10	3.10		.45	.52	.60	1.40	.50	3.10	.40	6.04
	14. Education	.75	.75	.75	.75	.75	.75	.75	.75	.75	.75	.75	.75
	15. Recreation . . .		15	.50	1.00			1.00	1.20	.50		.30	2.50
IV. *Religion:*	16. Church and Charity	1.50	1.50	1.50	1.50			4.00	1.50	1.50	1.50	4.00	Xmas 2.00
V. *Personal:*	17. Clothing	18.00		6.50	5.50	6.00	.15	6.00	7.15	1.15	9.40	14.00	1.73
	18. Pocket Money . .	1.50	1.50	1.50	1.50	.70	.35	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	19. Savings Bank . .	10.00	10.00	10. 00	15.00			10.00	25.00	24.00	22.00	18.00	20.00
	20. Life Insurance . .	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $85 a month through April 1. Salary, May 1, $40, due to San Francisco fire, April 18. No work in May. Drew $60 from savings, June 1. Salary June 1, $95 a month, due to increased hardware trade after fire. Problem. — Find cash balance at end of year.

INDORSING CHECKS

The real estate company received a check for $15 from Mrs. Woodward on January 2 for rent. It presented the check with its other checks at the receiving window of the bank to be deposited to its account. The receiving teller turned the check over to see whether it was properly "indorsed"; that is, whether the real estate company had written its name across the left end of the back of the check. The teller found the name, *Berkeley Real Estate Co.*, properly indorsed by John Doe, Treasurer, and accepted the check.

The bank clerk found that the Woodwards' checking account contained $75, gave $15 to the real estate company, charged the same to the Woodward account, and noted the fact that the balance was now $60. The next day the proprietor of the clothing establishment turned in a check signed by Mrs. Woodward for $18. He was careful, however, not to indorse the check until he reached the bank. Supposing, therefore, that he had lost the check before he reached the bank, no one else could have lawfully cashed it because his signature was not on the back. To insure against possible loss of checks, it is a safe rule *never to indorse a check until you reach the place where you are going to cash it, since no check can be cashed until it is indorsed.*

BANK STATEMENTS

During the month, the checks which had been paid to the various tradesmen gradually reached the bank and were charged to the Woodward account. On February 1, Mrs. Woodward called at the bank and asked for her "statement." This was a long envelope containing all the checks that she and her husband had written during the month of January and which

had been cashed by the bank. On the outside of the envelope was a statement of their account as follows:

Checks	Date	Deposits	Balance
	Dec. 31, '05	Balance fwd.	$ 2.75
	Jan. 2, '06	Deposit, $72.25	75.
$15.	Jan. 3		60.
18.	Jan. 4		42.
1.62	Jan. 5		
2.88	Jan. 5		37.50
2.50	Jan. 10		35.
4.00	Jan. 17		31.
1.50	Jan. 19		29.50
.75	Jan. 20		28.75

When Mrs. Woodward received her statement, she looked at the last figure in the right-hand column. To her surprise, instead of finding it $28, as the stub of their check book had led her to expect, she found that it was $28.75 and supposed that she was 75 ¢ richer than she had thought. When she came to investigate, however, she learned differently.

She found that the balance brought forward Dec. 31, 1905, agreed with the amount on her stub. (a) How much was this? (b) How much was deposited Jan. 2? (c) What was now the balance in the bank?

She found in the envelope the check for rent and made a mark on its stub to show that it had been cashed at the bank. How much money did her balance now show?

She looked on the outside of the envelope again and found that the next check that reached the bank was $18. For what item had this money been paid? (b) What balance now remained in the bank?

She marked the $18 stub and found that the next check was for $1.62. She marked the stub, calculated the balance, and found that the bank had subtracted correctly. What balance now remained in the bank?

She took each check, marked its corresponding stub and calculated the balance. When

she had marked each check on the stub, she found that the bank showed her balance to be $28.75, yet her stub showed it to be only $28. She therefore went over all her stubs and found that there was one stub for $.75 which she had not marked because the check had not yet been returned to the bank. The laundry company had not yet turned in the check. She knew, however, that it would reach the bank later and would reduce the balance to $28. *When the balance on the bank statement does not agree with the balance in the stub book, look up the stub of each check to find which checks have not yet been paid out of your account at the bank.* Never consider that you have as much money in the bank as the bank balance states, if there are checks that you have signed that have not yet been cashed.

PROBLEM 1. — Get your home bank statement for one month, and compare the checks given to you in the envelope at the bank with the bank statement of the balance.

PROBLEM 2. — Compare the checks with the stubs and note on their stubs the checks that have been returned. Find the stubs of the checks that have not yet been cashed, and find the total amount for which you have drawn checks that you have not paid.

PROBLEM 3. — Deduct the total of unpaid checks from the balance on the bank statement, and show that the remainder agrees with the last balance shown on your stub. If the numbers do not agree, search for an error in calculation or a check whose stub was not recorded. Do not give up the problem until the numbers agree, if you expect to keep accurate account of your money.

SAN FRANCISCO FIRE

During the winter months, Mr. and Mrs. Woodward tried to live within their estimate. They purchased high-low electric lights and made a fireless cooker. They also found that by

allowing the family $14 for health, recreation, incidentals, and clothing, a number of items that they had formerly considered necessary could now be dispensed with.

On April 18, the San Francisco fire destroyed the hardware store in which Mr. Woodward worked. He received $40 for his work during April, with the promise of his former position if the store should later be able to resume business. During April and May, while Mr. Woodward was out of employment, he divided his time between working in the house and garden and aiding in relief work for the refugees. (1) What expenses were cut down during these months? (2) What expenses could not be reduced?

Notice that the food account during May came to only $18 for two grown people and two children, aged $3\frac{1}{2}$ and 1 year. (3) Consult experts to find what is the most nourishing food that they could eat which could be purchased for this money.

GAS AND ELECTRIC METERS

While watching the electric light and gas bills, Mrs. Woodward studied the meters closely. When the pointer on the right-hand dial of the gas meter moved from 0 to 1, it showed that 100 cubic feet of gas had been consumed. When the gas company read the meter on Jan. 14, the pointers showed that 70,200 cubic feet of gas had been consumed. (4) How is this amount shown on the accompanying diagram of a gas meter?

When the gas company read the meter again on Feb. 14, they found that the meter read 73,400 cubic feet. (5) How many cubic feet of gas had

100 thousand   10 thousand   1 thousand
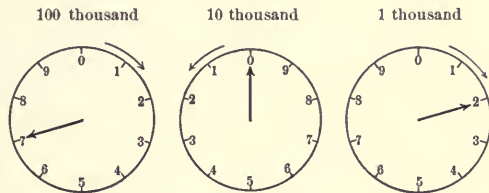
'CUBIC FEET OF GAS

been used during the month? (6) Draw the diagram of the gas meter showing the second position of the pointers. (7) Which pointer did not move during the month? Why?

The gas bill read as follows: *Meter readings* — 73,400

70,200

3,200 at $0.90 per 1000, $2.88

(8) Which meter reading was recorded first, the upper or the lower? (9) Which number shows the amount of gas consumed during the month? (10) On what date was this bill paid? (11) Account for the amount of the bill. (12) Watch the gas meter in your own home

10,000,000   1,000,000   100,000 watts   10,000 watts
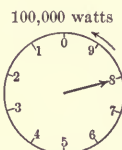
10,000 k. w. h.   1000 k. w. h.   100 k. w. h.   10 k. w. h.
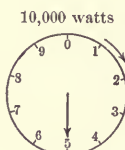
1 kilowatt contains 1000 watts. When the pointer on the right-hand dial moved from 0 to 1, it showed that the amount of electricity used was 1 kilowatt, or 1000 watts.

The above meter reading might be expressed in either of two ways: (1) 985 kilowatt hours, or 985 k. w. h.; (2) 985,000 watt hours, or 985,000 w. h. The first reading is more customary.

between two consecutive dates when it is read by the gas company, and explain the bill which is presented on the first of the next month. (13) Watch the gas meter at the beginning and end of its use for the family laundry, and calculate the cost for the laundry during one day.

The electric light meter showed that the electricity was measured in units called kilowatt hours — k. w. h. On January 14, when the Electric Lighting Co. read the meter, the pointers were placed as in the accompanying diagram. (14) Read the number of kilowatt hours that the meter recorded.

When the Electric Lighting Co. read the meter again on Feb. 14, they found that the meter read 1,002,000 watt hours. (15) How many watt hours had been used? How many

kilowatt hours had been used ? (16) Draw the diagram of the electric light meter, showing the second position of the pointers.

(17) Which new dial must now be used for the first time ? Why ?

The electric light bill read as follows :

Meter readings — 1002 k. w. h.

985 k. w. h.

17 kilowatt hours at 9 ¢ per k. w. h. = $1.53

(18) Which meter reading was recorded first, the upper or the lower ?

(19) Which number shows the amount of electricity consumed during the month ?

(20) On what date was this bill paid ?

(21) Account for the amount of the bill.

(22) Watch the electric light meter in your own home between two consecutive dates when it is read by the company, and explain the bill which is presented on the first of the next month.

(23) Watch the electric meter at the beginning and end of its use for the electric iron, and calculate the cost of the ironing during one day and the cost of electricity used by the iron per hour.

(24) An electric toaster costs from $3.50 to $4.00, and a vacuum cleaner from $35 to $60. Find the cost per hour of running these by electricity and the average number of hours needed by a family of four members.

FAMILY EXPENSE ACCOUNT

SEVENTH YEAR — 1907

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. *Household:*	1. Rent	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
	2. Electric Light . .	1.80	1.71	1.89	1.53	1.62	1.17	1.44	1.62	1.09	1.71	1.89	2.07
	3. Gas	2.97	2.89	2.70	2.89	2.61	2.70	2.88	2.97	2.07	2.70	2.89	2.97
	4. Fuel							15.00					
	5. Garbage	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	6. Help	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	2.00	4.00	4.00	4.00
	7. Laundry	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	.75	1.20	1.20	1.20
	8. Furnishings . . .	4.03	1.10	3.20	2.15	1.15	.75	1.14	10.05	1.10	.75	3.75	1.25
II. *Food:*	9. Food	25.14	21.10	23.42	22.69	25.31	24.26	22.61	20.43	19.18	24.10	22.05	27.14
III. *Family:*	10. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00
	11. Health	.25	.40	5.10	4.09	1.10	.25	4.10	1.05	2.50	5.00	.65	1.10
	12. Accident Insurance		20.00										
	13. Incidentals . . .	3.10	1.11	2.05	1.05	2.15	11.15	3.07	3.10	1.04	7.45	3.22	1.10
	14. Education . . .	1.50	.75	2.00	.75	1.35	.75	2.50	.75	.75	1.25	.75	.75
	15. Recreation . . .	.75	.50	1.00		.25	3.10	1.10	.50	20.10	1.10		8.00
IV. *Religion:*	16. Church and Charity	1.50	1.50	1.50	Charity 5.00	1.50	1.50	1.50	1.50	1.50	1.50	Thkgvg. 5.00	1.50
V. *Personal:*	17. Clothing	4.05	8.05	10.17	7.00	18.00	5.40	5.40	7.10	1.60	2.10	6.95	22.00
	18. Pocket Money . .	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	19. Savings Bank . .	20.00	7.00	10.00	18.00	10.00	13.00	5.00	15.00	17.00	17.00	13.00	
	20. Life Insurance . .	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $95 a month.   Two weeks' vacation, with pay, in August.   Planning to buy lot and build home.
PROBLEM. — Find cash balance at end of year.

INTEREST ON SAVINGS

During the year 1907, Mr. and Mrs. Woodward realized that if they continued to live within their estimate, allowing $14 a month for clothing, furnishings, incidentals, and recreation, their savings would soon be sufficient to make the first payment on a lot on which they could build their own home. They began, therefore, to calculate the interest that their savings bank deposits would bring them.

Their checking account could be opened at any commercial bank, but it did not draw interest because the money stayed in the bank such a short time. The savings account they opened at a savings bank, which frequently uses the same building as a commercial bank, but which is a different concern. · People deposit in a savings bank only the money which they expect to have in the bank long enough to draw interest. In many savings banks, one cannot withdraw money without giving thirty days' notice; and one cannot draw checks against a savings account.

DATE OF INTEREST

Savings banks usually pay 4 % a year interest on deposits that have been in the bank more than three months. The bank calculates this interest twice a year, on January 1 and July 1. Since the Woodward family always deposited their savings during the first five days of the month, this means that:

Their deposit of $15 in March, 1901, would receive interest on July 1, 1901.

Their deposit of $15 in April, 1901, would receive interest on July 1, 1901.

Their deposit of $15 in May, 1901, would receive interest on Jan. 1, 1902.

The May deposit would not receive interest earlier, because on July 1, 1901, the May deposit had not been in the bank three months.

PROBLEM 1. — Read the deposits in 1901 that would receive interest Jan. 1, 1902.

PROBLEM 2. — When would the deposit of $5 in October, 1901, first receive interest?

PROBLEM 3. — Read all the deposits that would receive interest July 1, 1902.

PROBLEM 4. — Write the amount of the last deposit that would receive interest on each of the following dates: Jan. 1, 1903; July 1, 1903; Jan. 1, 1904; July 1, 1904; Jan. 1, 1905; July 1, 1905; Jan. 1, 1906; July 1, 1906; Jan. 1, 1907; July 1, 1907; Jan. 1, 1908.

BALANCE

When money is deposited in the bank, the amount deposited is entered under the column headed "Balance in Bank." The amount deposited is added to the preceding balance. A rough estimate of the amount in the bank might be expressed as follows:

DATE	DEPOSIT	BALANCE IN BANK		
Mar. 1, 1901	$15.00	$ 15.00		
Apr. 2	15.00	30.00		
May 1	15.00	45.00		
June 4	12.00	57.00		
July 1		57.00 + interest through April 5		
July 1	15.00	72.00 +	"	"	"
Aug. 2	12.00	84.00 +	"	"	"
Sept. 3	10.00	94.00 +	"	"	"
Oct. 4	5.00	99.00 +	"	"	"
Nov. 1	12.00	111.00 +	"	"	"
Dec. 2	5.00	116.00 +	"	"	"
Jan. 1, 1902		116.00 +	"	"	Oct. 5
Jan. 2, 1902	10.00	126.00 +	"	"	"

PROBLEM 5. — Explain how the lines beneath the dates April 2 and Oct. 4 in the accompanying table correspond with the dates of the last deposits that draw interest July 1, 1901, and Jan. 1, 1902. Continue the use of such lines in making out bank accounts.

PROBLEM 6. — Continue the accompanying table until Nov. 1, 1902. On this date the family withdrew $120 from the bank. What balance was left?

It is evident that as the balance in the bank increases, the interest also increases. By Nov. 1, 1902, the family has received interest on their deposits three times, and interest will again fall due two months later. It becomes necessary, therefore, to calculate the exact amount of interest due. To avoid expense in bookkeeping, the banks do not usually pay interest on a fraction of a dollar or give interest which amounts to less than one cent.

TIME TO INTEREST

Since interest is computed twice a year, a monthly savings account necessitates counting the number of months which each deposit stays in the bank until Jan. 1 and July 1, the dates on which interest is declared. Thus the Woodward account would be entered as in the accompanying form.

Explain each item.

Date		Deposit	Time to July 1	Balance
Month	Year			
Mar. 1	1901	$15	4 mo.	$15
Apr. 2		15	3	30
May 1		15	2	45
June 4		12	1	57
July 1		Interest		

CORRESPONDING DEPOSIT FOR ONE MONTH

In calculating interest, the bank saves time by expressing each deposit as though a corresponding deposit had been placed in the bank for one month. Thus: In March, 1901, $15 was deposited, which on July 1 would receive interest for 4 months. Why? But the amount of interest would be the same as though $60 had been deposited for one month, since $15 \times 4 = 60$.

PROBLEM 7. — Calculate the interest at 4 % a year on $15 for 4 months, and also on $60 for one month, and show that the amounts of interest are the same.

In April, 1901, $15 was deposited which, on July 1, would receive interest for 3 months.

Why ? But the amount of interest would be the same as though $45 had been deposited for one month, since $15 \times 3 = 45$.

PROBLEM 8. — Calculate the interest at 4 % a year on $15 for 3 months, and on $45 for one month, and show that the amounts are the same.

PROBLEM 9. — Fill in the blanks in the following table with interest at 4 % per annum:

1. Deposit of $100 for 3 months earns same interest as deposit of $? for 1 month.
2.   "   "   50 " 6   "   "   "   "   "   "   "   ? " 1   "
3.   "   "   15 " 2   "   "   "   "   "   "   "   ? " 1   "
4.   "   "   12 " 5   "   "   "   "   "   "   "   ? " 1   "

Banks frequently insert a column headed " Corresponding Deposit for one Month " which they use as their basis for computing interest. The numbers in this column do not affect the numbers in the balance column, which shows the amount of money in the bank. The " Corresponding Deposit " column is used only in computing interest. The complete record of the Woodward savings account would therefore begin as follows:

DATE		DEPOSIT					TIME TO INTEREST	CORRESPONDING DEPOSIT FOR 1 MONTH				BALANCE IN BANK			
Month	Year					Cents										Cents
Mar. 1	1901		$	1	5		4 mo.			6	0	$	1	5	
Apr. 2	1901			1	5		3		1	0	5		3	0	
May 1	1901			1	5		2			3	0		4	5	
June 4	1901			1	2		1			4	2		5	7	
July 1	1901	Int. (on $105 for 1 mo.)				35							5	7	35

Notice that the April deposit of $15 for 3 mo. gives the same interest as a corresponding deposit of $45 for 1 month. When 45 is added to 60, it gives a total corresponding deposit of $105.

PROBLEM 10. — Calculate the "corresponding deposit" column for the following deposits: Feb. 2, $20; Mar. 3, $10; April 4, $17.

PROBLEM 11. — Notice that a line is drawn after the corresponding deposit for April, since this number, $105, is to be used in calculating the interest paid July 1. The corresponding deposit for May therefore starts a new series. Explain how the numbers 30 and 42 in the corresponding deposit column are obtained.

PROBLEM 12. — The interest on $105 for 1 month is $.35. Show that this amount of money could have been obtained also by calculating the interest on $15 for 4 mo. and adding this to the interest on $15 for 3 mo. The present method, however, reduces the number of times interest must be calculated to two a year. Explain.

PROBLEM 13. — Notice that the word *Interest* is inserted under the deposit column on July 1, because the interest $.35 is *deposited* to the family's account at this time. Where is the phrase " Int. on $105 for 1 mo." obtained ?

PROBLEM 14. — The balance in the bank is $57.35 on July 1. Unless it is withdrawn before Jan. 1, the balance, $57, will stay with the bank six months, and will receive as much interest as $342 deposited for 1 month. Explain. (Omit $.35 when computing interest.)

On July 1, this balance must be entered under the deposit column in order to compute the " corresponding deposit." But this balance must not be entered under the dollars column, because it is not an additional deposit. The complete record of the Woodward savings account for two years is therefore as shown in the table on page 37. Explain each of the following items in the account :

a. The position of the horizontal lines.

b. Show in the budgets for 1901 and 1902, pages 2 and 5, where the numbers in the *deposit* column are to be found.

c. In the *deposit* column explain where the following balances were obtained: $57.35, $128.31.

d. In the *corresponding deposit* column explain where the numbers were obtained as follows: $384 = 6 \times 57 + 42, 474 = ?$

e. In the *deposit* column explain how each amount of interest is obtained.

f. Why are the cents not included in the balance entered under the *deposit* column?

g. In July, 1902, the bank assumed that the balance, $216, would stay in the bank 6 months and therefore wrote 1358 in the *corresponding deposit* column. But when $120 was withdrawn in November, this withdrew interest for 2 months, and therefore 240 must be subtracted from 1541 and the January interest computed on $1301 for 1 month. Explain.

PROBLEM 15. — Complete the bank account for the Woodward family through April 1, 1908. Notice withdrawals May, 1905, June, 1906. Do not write any sheet a second time, to avoid errors in copying. Use banking paper ruled as in the accompanying table at end of book. Use ink and make neat, legible figures. As soon as a single sheet is correct, hand it to the teacher in order to obtain a record for accuracy and speed.

Notice that on April 1, the family made the first payment on their house. It becomes necessary, therefore, to find how much they had in the bank with which to begin buying their home.

PROBLEM 16. — Keep the bank account of a family which is saving money to buy a home. Use blanks at end of book.

ACCOUNT OF MR. AND MRS. FRANK WOODWARD

DATE		DEPOSIT						TIME TO INTEREST	CORRESPONDING DEPOSIT FOR 1 MONTH			BALANCE IN BANK				
Month	Year						Cents										Cents
Mar. 1	1901		$	1	5			4 mo.		6	0		$	1	5		
Apr. 2	1901	.		1	5			3	1	0	5			3	0		
May 1	1901			1	5			2		3	0			4	5		
June 4	1901			1	2			1		4	2			5	7		
July 1	1901	Int. on $105 for 1 mo.					35							5	7		35
July 1	1901	Bal. $57.						6	3	8	4						
July 1	1901			1	5			6	4	7	4			7	2		35
Aug. 1	1901	.		1	2			5	5	3	4			8	4		35
Sept. 2	1901			1	0			4	5	7	4			9	4		35
Oct. 3	1901				5			3	5	8	9			9	9		35
Nov. 1	1901			1	2			2		2	4		1	1	1		35
Dec. 4	1901				5			1		2	9		1	1	6		35
Jan. 2	1902	Int. on $589 for 1 mo.			1		96						1	1	8		31
Jan. 2	1902	Bal. $118.						6	7	3	7						
Jan. 2	1902			1	0			6	7	9	7		1	2	8		31
Mar. 3	1902			2	0			4	8	7	7		1	4	8		31
Apr. 4	1902			1	5			3	9	2	2		1	6	3		31
May 2	1902			2	2			2		4	4		1	8	5		31
June 4	1902			1	8			1		6	2		2	0	3		31
July 1	1902	Int. on $922 for 1 mo.				3	07						2	0	6		38
July 1	1902	Bal. $206.						6	1	2	9	8					
July 1	1902			1	8			6	1	4	0	6	2	2	4		38
Aug. 1	1902			1	5			5	1	4	8	1	2	3	9		38
Dec. 2	1902	Withdrew	1	2	0			1	1	3	6	1	1	1	9		38
Jan. 1	1903	Int. on $1301 for 1 mo.				4	53						1	2	3		91

FAMILY EXPENSE ACCOUNT

Eighth Year — 1908

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. *Household:*	1. Rent	15.00	15.00	15.00									
	2. House and Lot . .				520.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00
	3. Water					1.85	1.90	2.10	2.50	2.40	1.80	1.50	1.50
	4. Electric Light . .	1.98	1.72	1.53	1.53	1.44	1.44	1.44	1.53	1.71	1.98	1.98	2.25
	5. Gas	2.88	3.05	2.42	3.91	2.87	2.76	2.41	2.59	2.64	2.87	2.95	3.10
	6. Fuel							15.00					
	7. Garbage	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	8. Help ($2.10 a day) . .	4.20	4.20	4.20	4.20	8.40	4.20	4.20	4.20	4.20	4.20	4.20	4.20
	9. Laundry	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	.75	1.20	1.20	1.20
	10. Furnishings . . .	1.15	1.34	1.09	.50	12.00	7.10	3.20	2.15	7.60	3.25	1.10	4.00
	11. Survey Lot . . .				7.50								
	12. Search Title . .				15.00								
	13. Record Contract . .				1.75								
	14. Fire Insurance . .				10.50								
II. *Food:*	15. Food	24.35	25.40	24.20	25.19	26.11	22.90	21.14	23.27	26.24	28.15	27.10	28 15
III. *Family:*	16. Family	10.35	26.44	11.50	40.10 Moving	18.75	9.25	14.77	9.40	14.75	15.80	18.62	12.95
IV. *Religion:*	17. Church and Charity	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	6.50	1.50
V. *Personal:*	18. Clothing	6.25	3.75	18.21	2.10	1.10	10.50	7.16	19.40	9.75	18.62	20.21	18.40
	19. Pocket Money . .	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	20. Savings Bank . .	18.00											
	21. Life Insurance . .	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $95 a month. Family built their own home in April; moved in May; withdrew $550, April 1, 1908. Mr. Woodward earned $15 a month by keeping outside books at night from July to November inclusive.

PROBLEM. — Find cash balance at end of year.

SAFEGUARDS CONCERNING INVESTMENTS

By March, 1908, Mr. and Mrs. Woodward had accumulated about $600. They had been asked by various real estate companies and loan associations to invest their money with them. In order to avoid unsafe investments, they asked advice from the bank where their savings were deposited. The bankers refused to recommend any investment companies, but gave them three safeguards:

1. Any company that has been long established and has made its business reputation is safer than one that is only a few years old. Explain why this is true.

2. A trust company that is incorporated under the banking laws of the state or a building and loan association subject to the state laws governing such associations is usually considered safe, whereas one cannot be absolutely sure of companies that are not required to comply with these laws.

3. The bank is required by law to make only such investments as are absolutely safe, and is therefore not able to give its depositors a high rate of interest. Any company or association that pays a higher rate of interest than a bank pays, is enabled to do so only because it makes investments of the funds deposited with it in more speculative enterprises than are permitted to the banks under the banking laws. The depositor with such a company or association is therefore running a greater risk. Any company that pays interest of more than 5 % is doing so at such a risk that people should not invest any of their savings in such a concern. Give reasons for this statement.

In a few days, Mr. and Mrs. Woodward had decided to buy a lot and build a house by contract. The banker approved two real estate firms which he knew were in good standing.

BUYING A HOME

In April, 1908, the real estate firm built a house on a 40-foot lot costing $15 a front foot, for which they gave Mr. and Mrs. Woodward a contract of sale. According to the contract, the builder erected a six-room house worth $2000 on the lot chosen on Milvia St., near Cedar. He retained the title to the property until it had been paid for by the first cash payment of $520, which was one-fifth of the investment, and by monthly instalments of $26 each, interest at 8 % per annum. He thus protected himself in case the family failed to pay, by retaining the title to the house and lot. Mr. and Mrs. Woodward held the contract of sale, which they recorded at the Hall of Records for a fee of $1.75. By recording the contract of sale and saving their receipts showing their monthly payments on the house, also their cancelled checks for these payments, they protected themselves in case the builder should fail to give them the title when the house and lot were paid for. *They also inserted a clause in the contract which gave them the privilege of securing the title at any time by paying their obligations in full.*

QUESTIONS.   1. State the width of the lot, price per foot, and multiply to find the total price.

2. State the value of the house to be built and the value of house and lot together.

3. What fraction of the value of the house and lot was paid for in the first cash payment?

4. How much money was paid on the house and lot in April, 1908? How much money was still due on the principal? At what rate of interest?

5. How much money did the Woodward family contract to pay the real estate firm each month, beginning May, 1908? How were they able to pay this large sum for which they had not allowed in their previous budgets?

6. What other expenses must be met when buying a house and lot besides the payments for the land and building?

PROBLEM 1. — On April 1, 1908, the family owed the real estate firm $2080. Why? Find the interest due on this money by May 1, 1908, at 8 % per annum.

PROBLEM 2. — The total amount paid to the real estate firm, May 1, 1908, was $26. Of this money part was interest and part was principal. The preceding problem showed the amount of interest due. Subtract this interest from $26. to find how much of the principal was paid on May 1. Was the interest paid more than amount paid on the principal?

PROBLEM 3. — The preceding problems show the principal paid May 1. Subtract this from $2080 to find how much principal was still due. Find the interest on this principal from May 1 to June 1 at 8 % per annum.

a. Record the interest in the proper column as shown below.

b. Subtract the interest from $26 to find the principal paid.

c. Subtract the principal paid from the balance due May 1 to find the balance still due on the principal.

PROBLEM 4. — Explain each item in the table on page 42 and continue the table until 1912, when the house was mortgaged. Find the balance due on the principal at the time that the house was mortgaged. Use blanks at end of book for " Payments on house and lot."

DATE OF PAYMENT	TOTAL PAYMENT	AMOUNT PRINCIPAL	AMOUNT INTEREST	BALANCE DUE ON PRINCIPAL
April 1, 1908	$520.00	$520.00		$2080.00
May 1, 1908	26.00	12.13	$13.87	2067.87
June 1, 1908	26.00	12.22	13.78	2055.65

PROBLEM 5. — In April, 1908, the family withdrew from the savings bank sufficient money to cover the cash payment on the lot, surveying the land, searching the title, recording the contract of sale, and fire insurance, $10. How much did they draw? How much remained in the bank as a cash reserve?

NIGHT WORK

To meet the expenses of moving and making the first payment on the house and lot, Mr. and Mrs. Woodward withdrew $550 from the savings bank. They found, however, that it was difficult to make a monthly payment of $26 instead of paying $15 for rent as formerly. With their utmost endeavors they were unable to live within their salary. Mr. Woodward therefore worked at night keeping sets of books for outside firms, and received $15 a month from July to November inclusive. He found, however, that the five months of extra work impaired his eyesight, and he was obliged to give it up.

Among the other methods of increasing the family income, Mr. Woodward considered instructing in bookkeeping in the Y. M. C. A. night school, acting as secretary for the improvement club in his neighborhood, and taking charge of a night class in the gymnasium. Find the price paid for such work in your own neighborhood and discuss the relative advantages of each method.

FAMILY EXPENSE ACCOUNT

Ninth Year — 1909

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. *Household:*	1. House and Lot . .	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00
	2. Taxes				19.34							18.72	
	3. Water	1.50	1.50	1.50	1.65	1.70	1.90	2.00	2.10	1.90	1.70	1.50	1.50
	4. Electric Light . .	1.26	1.17	1.26	1.17	1.17	1.08	1.08	1.26	1.35	1.62	1.80	2.07
	5. Gas	3.75	3.10	3.72	3.06	2.97	3.24	3.60	3.78	3.24	3.33	3.54	3.78
	6. Fuel							15.00					
	7. Garbage . . .	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	8. Help ($ 2.10 a day) .	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	2.10	4.20	4.20	4.20
	9. Laundry . . .	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	.75	1.80	1.80	1.80
	10. Furnishings . . .	15.00 Screen Porch	1.00	2.10		.67	1.10	2.05	1.10		5.10	2.33	1.05
II. *Food:*	11. Food	37.90	38.10	35.27	36.10	31.05	32.50	33.25	31.10	25.08	39.75	36.10	38.14
III. *Family:*	12. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00
	13. Accident Insurance		20.00										
	14. Health				.20			6.10	2.50		1.10	4.00	2.75
	15. Incidentals . . .	1.00	.50	.50	3.50	.59	2.05	.71	1.00		4.35	5.10	3.10
	16. Education . . .	2.10	.75	.75	.75	.75	.75	.75	1.55	.75	.75	1.50	1.10
	17. Recreation . . .	.75	.50	2.10	.90					21.10 Vacation	.50	2.10	5.15
IV. *Religion:*	18. Church and Charity	1.50	1.50	1.50 Birthday	1.50	6.50 Charity	1.50	1.50	1.50	1.50	1.50	2.50 Thkgvg.	1.50 Xmas
V. *Personal:*	19. Clothing	21.25	10.25	21.14	13.20	15.75	16.17	24.14	12.40	32.25	15.70	5.10	5.14
	20. Pocket Money . .	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	21. Savings Bank . .			10.00		20.00	20.00				15.00		8.00
	22. Life Insurance . .	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $100. Boarder, $25 a month, except during August (paid in advance).

PROBLEM. — Find cash balance at end of year.

CLOTHING

PROBLEM 1. — In 1909 the Woodward children were seven and four years old. If their clothing bill for the year amounted to 25 % of the entire outlay for clothing, find the cost of the children's clothing during 1909.

PROBLEM 2. — Find the total expenditure for the year, and see what per cent of this amount was spent upon clothing.

PROBLEM 3. — Find the total cost of the following estimates for clothing for a boy and a girl 12 years of age for one year. Notice which articles need not be bought a second year.

PROBLEM 4. — Make an estimate for a twelve-year-old boy or girl, using local prices for the clothing that you are in the habit of wearing. Compare the total with that in the following estimate. Find what per cent of your family budget for the year is devoted to clothing.

CLOTHING ESTIMATE FOR ONE YEAR

GIRLS		BOYS	
I. BOOTS AND SHOES		I. BOOTS AND SHOES	
Shoes	$12.00	Shoes	$28.00
Repairs	6.00	Repairs	6.00
Rubbers	.75	Rubbers	.75
II. COATS AND HATS		II. COATS AND HATS	
Rain coat	$ 2.00	Rain coat	$ 4.50
Heavy coat	10.00	Overcoat	11.25
Summer coat	3.50	Caps	1.00
Caps	1.50	Hat	2.00
Hat	1.50	Sweater	6.50
Sweater	4.00		

III. UNDERCLOTHING
    Hose . . . . $ 2.50
    Underwear, skirts, and nightwear . . 11.00
IV. DRESSES
    Gingham dresses . . . . $ 5.00
    White dresses 5.50
    Woolen dresses 11.00
V. INCIDENTALS
    Handkerchiefs . . . . $ .90
    Hair ribbons, gloves, etc. 3.25
    Umbrella 1.00

III. UNDERCLOTHING
    Hose . . . . $ 3.00
    Underwear, shirts, and nightwear . . 14.25
IV. SUITS
    Two suits . . . . $ 20.00
    Two pairs of corduroys 4.00
V. INCIDENTALS
    Handkerchiefs . . . . $ 1.20
    Ties, belts, etc. 2.00
    Umbrella 1.00

TAXES

QUESTIONS. Because their home was not built before March 1, Mr. and Mrs. Woodward were not required to pay taxes until April, 1909. Find the amount paid at this time. If the taxes were not paid by the last Monday in April, they would have been increased. (The penalty varies in different localities.)

Taxes in California are payable in equal amounts during November and April in two different offices. City taxes are payable to the City Tax Collector in the City Hall and county taxes to the County Tax Collector at the County Court House. The Woodward family paid their taxes by checks mailed to these two offices and were careful to see that these checks were mailed before the last Monday in November and in April, in order to avoid paying the extra penalty for delay. In the city of Berkeley 15 % is added to the November instalment if not paid by the last Monday in November; if still unpaid after the last Monday in April, 20 % is added

to the first instalment and 5 % to the second instalment.   The penalties imposed by the county vary slightly.   Find the penalty in county taxes where you live.

Mr. Woodward was in the habit of writing to both the County and City Tax Collectors to find the amount due on their property early in the month.   Although the house decreased in value with the years, the increasing value of the land offset this depreciation.

1. How much would the family have had to pay as a penalty for not being prompt in settling city taxes ?

The tax rate on property varies from year to year.   The house and lot were worth $2600, but the taxes were levied upon only 60 % of this amount.

2. Upon what amount of money was the tax levied ?

3. Since the tax was $19.34, find the rate per cent of taxation.

PROBLEM. 1. — Since taxes were levied on only 60 % of the value of the property, find, from the taxes paid, the rate of taxation during the years 1909 to 1914 inclusive.

PROBLEM 2. — Find the city and county taxes in your own town and calculate the penalties for delinquent taxes on your own home.

TAKING A BOARDER

Despite the fact that in 1909 Mr. Woodward's salary was raised to $100 per month, the expenses could not be kept down to this figure.   The family decided, therefore, to build a screen porch for the children and rent one room to a boarder at $25 a month.   Because he paid less board than was customary, it was not necessary for the family to raise their standard of living.   In August he took his vacation.

FAMILY EXPENSE ACCOUNT

Tenth Year — 1910

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. *Household:*	1. House and Lot	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00
	2. Taxes				18.72							19.50	
	3. Water	1.50	1.50	1.50	1.75	1.80	1.85	2.10	2.40	2.20	1.90	1.40	1.60
	4. Electric Light	1.35	1.26	1.17	1.26	1.17	1.17	1.08	1.26	1.35	1.62	1.89	2.07
	5. Gas	3.60	3.42	3.61	3.06	2.91	2.87	3.05	2.89	2.50	3.31	3.45	3.61
	6. Fuel							15.00					
	7. Garbage	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	8. Help	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	2.10	4.20	4.20	4.20
	9. Laundry	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	.75	1.20	1.20	1.20
	10. Furnishings	.25	.14	3.10	.52	1.17	.58	.97	.84	1.90	4.10	3.70	1.50
	11. Insurance to Protect Home	18.17											
II. *Food:*	12. Food	38.10	36.14	36.15	32.05	32.41	33.05	31.28	27.16	34.14	31.18	36.19	37.14
III. *Family:*	13. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	14. Accident Insurance		20.00										
	15. Health	.50	.75	3.90	4.10	2.50	.40		.60	.15	.82	.90	1.40
	16. Incidentals	1.10	.65	2.75	1.10	3.40	2.05	4.10	1.10	1.15	2.75	1.08	4.00
	17. Education	2.10	.75	.75	.75	.75	1.00	.75	3.10	.75	.75	6.75	.75
	18. Recreation	School	.20	1.50	.80	.50	.30	2.00	1.10	.50	.75	.30	3.00
IV. *Religion:*	19. Church and Charity	1.50	1.50	1.50	1.50	6.50	1.50	1.50	1.50	1.50	1.50	2.50	2.50
V. *Personal:*	20. Clothing	20.05	8.15	20.14	12.15	14.72	15.15	22.14	11.60	30.42	13.70	4.75	6.11
	21. Pocket Money	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	22. Savings Bank			10.00		25.00	30.00			12 00	15.00		20.00
	23. Life Insurance	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $ 100.   House insured against debt.   Boarder, $ 25 a month, except during August.

PROBLEM. — Find cash balance at end of year.

INSURANCE TO PROTECT THE HOME

By January, 1910, Mr. and Mrs. Woodward realized that they had not yet deposited enough money in the bank to have a sufficiently large cash reserve in case of emergencies. They also realized that if Mr. Woodward should die, there would be no steady income to pay off the large debt on the home. They therefore decided to carry additional life insurance in the form of a five-year renewable and convertible term policy. In case of Mr. Woodward's death, the proceeds of the policy were to be applied to protect the home and furniture. They consulted an insurance company in good standing, and were advised to adopt this method of protecting the home from the burden of heavy debt. Mr. and Mrs. Woodward took out a five-year term policy, for which they paid at the rate of $12.11 for $1000 of protection. They decided to pay $18.17 a year to protect their home. If Mr. Woodward should die during the year, the payment of $18.17 would insure the company's paying $1500 to the real estate company to decrease the amount owing on the house and lot.

Mr. Woodward paid at the rate of $12.11 for $1000 worth of protection, because he was thirty-five years of age. At the end of five years, when he went to the company to renew his policy, he would be required to pay $13.67 per $1000, the higher rate being due to his greater age. During this time, however, the amount owing on the house had decreased, so that he only needed to insure it for a smaller amount of money. He decided to insure for $1000. How much less was this than the amount due on the home?

QUESTIONS. 1. At the rate of $12.11 for a protection of $1000, how much money must be paid to obtain a protection of $3500?

2. If Mr. Woodward had wished to obtain $2000 insurance when he took out his five-year renewable term policy in January, 1910, how much would he have had to pay for it?

3. Mr. Woodward took out an insurance policy whose proceeds would be applied to protect the home in the event of his death. Is such a policy most desirable when the payments on the house are beginning, or when they are nearly finished? Why?

PROBLEM 1. — Find the amount owing on the house and lot in January, 1910.

PROBLEM 2. — If Mr. Woodward should die during this month, and the proceeds of this policy were applied to the debt on the home, how much money would still be owing on the home?

PROBLEM 3. — Find local situations where it would be advantageous to use a five-year renewable term policy to protect the home against debt. Show how, when the debt is cleared, the premium may be kept up to provide for the education of the children.

PROBLEM 4. — If the Woodward family had decided to rent their home, if they were fortunate enough to secure a permanent tenant, their situation might be as follows: Rent received, 10 % of cost of house and lot. Expenses: (1) Taxes levied on 60 % of the value of the house and lot at the rate of $2.37 per $100. (2) Fire insurance for one year, at the rate of $.70 per $1.00 for 3 years. (The value of the house was $2000.) (3) Repairs, 4 % of the value of the house.

Find the profit made from renting the house for one year. Compare this profit with the income arising from investing $2600 at 5 % per annum. Which is the safer method of investment? Why?

FAMILY EXPENSE ACCOUNT

ELEVENTH YEAR — 1911

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. Household:	1. House and Lot . .	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00	26.00
	2. Taxes				19.50							19.66	
	3. Water	1.50	1.60	1.50	1.70	1.85	2.00	1.90	2.10	2.20	1.90	1.50	1.50
	4. Electric Light . .	1.42	1.37	1.54	1.26	1.17	1.10	1.15	1.20	1.00	2.40	1.80	1.95
	5. Gas	3.60	3.42	3.55	3.47	3.29	3.15	3.21	3.11	2.50	4.50	3.80	3.25
	6. Fuel							15.00					
	7. Garbage	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	8. Help	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	24.20	4.20	4.20
	9. Laundry	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	.75	2.50	2.00	1.20
	10. Furnishings . . .	.75	1.50	1.25	.55	.75	1.40	2.50	.15	1.40	7.60	5.20	1.40
	11. Fire Insurance . .	10.50											
	12. Home Insurance .	18.17											
II. Food:	13. Food	40.05	35.10	37.90	32.40	38.60	29.15	36.40	25.50	28.20	45.10	37.42	36.15
III. Family:	14. Carfare (to S. F.)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00			3.00
	15. Accident Insurance		20.00										
	16. Health	.75	.25	4.30	2.50	.60	1.10	.15	.42	1.05	18.00	22.00	120.00
	17. Incidentals . . .	2.40	1.75	3.10	9.80	4.20	1.60	3.75	2.10	4.05	6.70	7.40	2.15
	18. Education . . .	4.75	.75	.75	1.50	.75	.90	.75	3.75	.75	.75	.75	.75
	19. Recreation . . .	School .30	.25	2.00	.40	.90	1.50	.70	School .80	Vacation 27.15	.10	.20	.30
IV. Religion:	20. Church and Charity	1.50	1.50	1.50	6.50	1.50	1.50	1.50	1.50	1.50	1.50	3.50	1.50
V. Personal:	21. Clothing	2.40	6.10	17.80	6.10	21.70	30.45	29.80	41.40	20.09	2.05	1.40	3.50
	22. Pocket Money . .	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. Savings:	23. Savings Bank . .			10.00		8.00							
	24. Life Insurance . .	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $100 to September 1. Car collision: Mr. Woodward out of work 10 weeks. Salary, Oct. 1, $0; Nov. 1, $0; Dec. 1, $50. Boarder, $25 a month, except during August. Received from Accident Insurance Co., $200.

PROBLEM. — Find cash balance at end of year.

CAR COLLISION

In August, 1911, the Woodward family went on their customary vacation, with the salary continuing as usual. At the end of the vacation, Mr. Woodward broke his leg in a street car collision and was laid up for ten weeks. The firm obtained a substitute until Nov. 14, when he was able to return to work. He received $100 salary Sept. 1, no salary Oct. 1 or Nov. 1, and $50 Dec. 1. According to the terms of his accident insurance policy, he received $20 a week for each of the ten weeks that he was unable to work. His expenses for sickness amounted to $105.

QUESTIONS. 1. How much money did the family receive from the accident insurance company to meet the emergency?

2. How much of the insurance could be devoted to living expenses after paying the bill for doctor and nurse?

PROBLEM 1. — Find the monthly expenditure and the cash balance for each month of the year 1911.

PROBLEM 2. — How much money would the family need to draw from the bank Dec. 1, 1911, to settle all outstanding bills? Was there enough money in the bank to meet this demand? What balance was left in the bank?

PROBLEM 3. — Find the balance in the bank at this time and the balance remaining after the necessary withdrawal had been made.

ACCIDENT INSURANCE

Accident insurance is money spent as a safeguard against possible disaster. If no disaster occurs, the money does not come back to the man who paid it, but the family has the assurance that provision has been made against possible accidents.

To obtain insurance against accident, the breadwinner of the family tells the company his salary. The company charges a rate based on the danger of the occupation. Mr. Woodward's occupation entitled him to $5 a year for a policy which promises to pay $5 a week in case of accident. A carpenter doing outside work would pay three times the rate of a bookkeeper. The company, however, will not insure a man so as to secure him a larger return in case of accident than 80 % of the salary that he earns during health. The man is said to pay $5 " premium " for a $1000 policy. In case of death, the $1000 is paid to his widow; in case of accident, $5 a week is paid to him as long as he is totally disabled.

In 1901 Mr. Woodward wished to take out an accident policy for $5000. Explain why this would have cost him $25 a year. This policy would have paid him $25 a week in case of accident. But in 1901 Mr. Woodward was not earning as much as $25 a week, and the company therefore refused to insure him for such a large amount.

QUESTIONS. 1. How much premium did Mr. Woodward pay on his accident policy in 1901 ? How much insurance could he take out for this amount of money ? How much would he receive each week in case of accident ? How much money did he earn each week ? Would he receive more money per week in health or when injured ? How much more ?

2. Answer the two questions immediately preceding for the years 1902, 1903, 1904, 1905, and 1906, noticing the increase in salary.

3. In which year did Mr. Woodward take out additional accident insurance? How much would the estate now receive in case of his death? How much would he receive per week in case of accident?

4. How much money had the family paid to the accident insurance company by the time the accident occurred? How much did they receive from the company? How much more did they receive than they had paid?

It must be borne in mind that the family received a much greater benefit than the difference in the money paid and the money received. If they had neglected taking out an accident insurance policy, the money that they spent each year in premiums would have slipped away with nothing to show for it and would not have been on hand when needed at the time of the accident. Had the accident proved fatal, the company would have paid $4000 to the estate.

In the United States the census of 1910 shows that 11 % of all deaths are due to accident. More workmen are prevented from pursuing their occupations on account of accidental injuries than because of lack of employment.

PROBLEM 1. — If the premiums paid to the accident insurance company had been deposited in the savings bank instead, how much money would they have earned from January, 1901, to September, 1910? (Notice the increased insurance taken out when the salary rose.)

PROBLEM 2. — Two of Mr. Woodward's neighbors were injured in the same car collision. One of them was earning $5000 a year and was insured to the full extent of his salary. How much premium did he pay each year? How much "indemnity" would he receive per week in case of accident? How much money would the company pay in case of his death? He had been carrying insurance for ten years and four months and was unable to work for seven

months.   How much more did he receive from the accident insurance company than he would
have received from the same amount of money put in the savings bank?

The second neighbor had been " thinking about " taking out insurance against accident, but
had not done so.   After two weeks he died of his injuries.

PROBLEM 3. — Consult an accident insurance company for problems such as might occur
in your own home, and show why more people ought to carry insurance against accidents.

PROBLEM 4. — Show by consultation with the company that insurance is a device by which
we bear one another's burdens.   Show why the company can afford to pay so much more
money in case of accident or death than the amount of the premium paid by the policy holder.

FIRE INSURANCE

Fire insurance resembles accident insurance in the fact that the money brings no return
but peace of mind, except in case of disaster.   It is customary to insure the house against fire
every three years.   Find the dates when the fire insurance premiums were paid.   The family
paid $10.50 every three years for a protection of $1500.   How much was this a year?   How
much would the family receive in case of complete loss by fire?   What was the rate of
insurance?

It is usually possible to take out fire insurance for only two-thirds of the value.   On this
estimate, what was the rate of insurance upon the house and furniture?

PROBLEM 1. — Find the amount of fire insurance to be taken out on houses worth the fol-
lowing amounts: $2500, $3000, $3500, $5000, $6000.

PROBLEM 2. — Find the fire insurance on your own home.   Consult a fire insurance agent
to learn how the value of the house is determined.

FAMILY EXPENSE ACCOUNT

TWELFTH YEAR — 1912

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. *Household:*	1. House and Lot . .	26.00	26.00	26.00	26.00	26.00	26.00	26.00	Note on mortgage	20.00	20.00	20.00	20.00
	2. Taxes				19.66							19.84	
	3. Water	1.50	1.70	1.65	1.80	1.95	2.10	2.30	2.50	2.30	1.80	1.60	1.50
	4. Electric Light . .	1.53	3.47	4.35	1.35	1.28	1.32	1.15	1.20	1.33	1.58	1.72	2.10
	5. Gas	3.84	10.91	11.37	6.42	5.84	4.50	3.80	4.20	3.60	4.20	3.91	3.85
	6. Fuel	6.15						15.00					
	7. Garbage	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	8. Help	4.20	30.75	29.20	16.40	12.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20
	9. Laundry	1.20	12.50	10.80	6.40	5.90	5.50	5.50	5.50	5.50	5.50	5.50	5.50
	10. Furnishings . .	6.80	5.40	3.20	1.10	1.05	.73	.15	1.10	1.20	.85	1.20	2.05
	11. Home Insurance .	18.17											
	12. Search Title . . .								15.00				
	13. Record Mortgage .								1.25				
II. *Food:*	14. Food	38.17	53.24	52.17	49.80	45.40	43.20	40.19	42.17	41.54	37.18	36.42	37.18
III. *Family:*	15. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	16. Accident Insurance		20.00										
	17. Health	.75	2.10	4.50	2.05	3.77	1.25	2.00	3.75	2.40	4.05	2.70	3.15
	18. Incidentals . . .	4.00	7.60	2.90	3.40	2.50	1.85	4.70	17.25	18.76	18.19	4.51	11.24
	19. Education . . .	2.75	.75	.75	.75	.75	.75	.75	3.15	.75	.75	.75	.75
	20. Recreation . . .	.20			.20	.50	.50	.20	.40	.35	.35	.60	2.50
IV. *Religion:*	21. Church and Charity	1.50	.20	.20	.20	1.50	1.50	1.50	1.50	1.50	1.50	2.50	1.50
V. *Personal:*	22. Clothing	6.70	1.20	7.60	8.40	12.60	20.90	14.30	11.40	12.90	13.40	15.10	21.60
	23. Pocket Money . .	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	24. Savings Bank . .												
	25. Life Insurance . .	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $100. Bertha Woodward born January 1, 1912.
Home mortgaged Aug. 1, 1912. Boarder, $27.50 a month, beginning April 1.
PROBLEM. — Find cash balance at end of year.

KEEPING CHICKENS

Date	Particulars	Rec'd	Paid	Date	Particulars	Rec'd	Paid
1911				1913			
Nov.	Built hen houses		$ 15.00	Apr.	Lime and whitewash brush		$ .75
1912				May	Sold 12 doz. eggs		
Mar.	Bought 24-day-old blooded Minorca chicks @ 20¢; 4 died; 12 of the others were pullets		4.80	June	Feed		2.50
				June	Sold 11 doz. eggs		
				July	Sold 9 doz. eggs		
				July	Sold 8 young roosters for broiling	$ 4.80	
Mar.	Feed		4.00	July	Feed		5.50
Sept.	Feed		3.00	Aug.	Sold 7 doz. eggs		
Sept.	Sold 7 roosters	$ 5.60		Sept.	Sold 6 doz. eggs		
Sept.	Sold 3 doz. eggs	?		Oct.	Sold 12 hens at 16¢ per lb.	7.84	
Oct.	Feed		3.50	Oct.	Sold 7 doz. eggs		
Oct.	Sold 6 doz. eggs	?		Nov.	Feed		6.00
Nov.	Sold 12 doz. eggs			Nov.	Sold 12 doz. eggs		
Dec.	Feed		5.40	Dec.	Sold 13 doz. eggs		
Dec.	Sold 13 doz. eggs			1914			
1913				Jan.	Sold 14 doz. eggs		
Jan.	Sold 14 doz. eggs			Feb.	Feed		1.50
Feb.	Sold 15 doz. eggs			Feb.	Sold 15 doz. eggs		
Mar.	Feed for hens and little chicks		6.00		*Total*		
Mar.	Hatched 2 doz. chicks						
Mar.	Sold 16 doz. eggs				*Cash Balance*		
Apr.	Sold 16 doz. eggs						

While recovering from his accident, Mr. Woodward built hen houses at a cost of $15. He paid his employer for the materials used, in three instalments, whenever the fowls had yielded a profit of $5. Upon what dates did he pay his employer? Some of the remaining profit from the chickens was devoted to paying for an invalid chair which had been bought on the instalment plan.

Find local prices to see the extra expense of buying furniture on the instalment plan.

PROBLEM. — Find the profit in the preceding chicken account.

Average price for eggs per dozen: January, 40¢; February, 35¢; March, 30¢; April, 30¢; May, 25¢; June, 30¢; July, 35¢; August, 40¢; September, 45¢; October, 50¢; November, 55¢; December, 55¢.

MORTGAGING THE HOME

During January and February, Mrs. Woodward was seriously ill and expenses were so great that it was impossible to live on $100 a month. The doctor expressed his willingness to wait six months for his bill, but other expenses compelled Mr. Woodward to draw all his money from the savings bank to pay his monthly bills. How much was this? During the spring the bills for food were unpaid. How much was owing by June 1? By the end of six months it became evident that the family could no longer continue the monthly payments of $26 on the house and lot. They therefore decided to borrow money from the bank in order to pay off the builder and secure enough ready cash to pay the doctor's bill and their grocer's and butcher's bills. They made application to the bank for a loan; the bank committee inspected the property and granted the amount asked for. The property was worth $2600. The deed to the property was then obtained from the builder. (See page 40.) For security the bank took a mortgage on the property, on which they were willing to loan 55% of its value.

PROBLEM 1. — Find how much money the family received from the bank when they mortgaged their home.

PROBLEM 2. — Find how much they had to pay the builder in full on August 1, 1912.

PROBLEM 3. — Find how much ready cash the family would receive from the transaction. Was this sufficient to pay the doctor, grocer, and the butcher?

The note to the bank was secured by a mortgage on the house and lot, the title was searched, at a fee of $15, and the mortgage recorded in the Hall of Records for $1.25. Mr. and Mrs. Woodward suggested repaying the money semi-annually, but the bank urged them to pay monthly, since they were receiving a steady salary. They finally succeeded in arranging with the bank to pay $20 a month, beginning September, 1912, interest 7 % per annum.

PROBLEM 4. — On Aug. 1, 1912, the family owed the bank $1430. Why? Find the interest due on this money by Sept. 1, 1912, at 7 % per annum.

PROBLEM 5. — The total amount paid to the bank, Sept. 1, 1912, was $20. Of this money part was interest and part was principal. The preceding problem showed the amount of interest due. Subtract this interest from $20 to find how much of the principal was paid on Sept. 1. Was the interest paid more or less than the principal paid?

PROBLEM 6. — The preceding problems show the principal paid Sept. 1. Subtract this from $1430 to find how much principal was still due. Find the interest on this principal from Sept. 1 to Oct. 1 at 7 % per annum.

   a. Record the interest in the proper column as shown on page 59.
   b. Subtract the interest from $20 to find the principal paid.

c. Subtract the principal paid from the balance due Oct. 1 to find the balance still due on the principal.

PROBLEM 7. — Complete the following table until Jan. 1, 1915. Rate, 7 % per annum; payments, $20 per month, including principal and interest. Estimate roughly the length of time before the mortgage is paid in full. Use blanks at end of book for payments on mortgage.

DATE	INTEREST	PAID TO	PAID ON PRINCIPAL	BALANCE DUE
1912		1912		$1430.00
Sept. 1	$8.34	Oct. 1	$11.66	1418.34
Oct. 1	8.27	Nov. 1	11.73	1406.61

PROBLEM 8. — Find the conditions under which a local mortgage has been obtained and calculate the payments for one year according to the above table.

PROBLEM 9. — Mr. and Mrs. Woodward discovered that a payment of $20 a month was a payment of 20 % of their salary for rent. This is the customary fraction of the income to devote to rent. They had made a mistake in assuming that they could devote $26 to rent out of a salary of $100. In the local mortgage upon which you are figuring, find what fraction of the salary is devoted to paying off the mortgage.

PROBLEM 10. — After mortgaging the home, Mr. Woodward paid all his creditors except the doctor. He paid this bill as rapidly as possible, instead of putting money in the bank. On Jan. 1st, 1913, Mr. Woodward withdrew $90 from his surplus in the life insurance company to pay outstanding bills (including $30 to the doctor).

FAMILY EXPENSE ACCOUNT

Thirteenth Year — 1913

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. *Household* :	1. House and Lot	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
	2. Taxes				19.84							23.39	
	3. Water	1.50	1.50	1.65	1.71	1.80	2.05	2.10	2.40	2.30	1.80	1.60	1.55
	4. Electric Light	1.89	1.96	1.74	1.65	1.71	1.52	1.61	1.73	1.81	1.91	2.01	2.15
	5. Gas	3.05	2.88	3.09	2.65	2.54	2.73	2.84	2.91	1.84	2.10	2.60	2.84
	6. Fuel								15.00				
	7. Garbage	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	8. Help	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	2.10	4.20	4 20	4.20
	9. Laundry	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	3.75	4.15	4.15	4.15
	10. Furnishings	3.20	1.10	1.50	3.10	4.40	6.10	2.50	13.00	4.25	1.10	3.04	2.17
	11. Insurance to Protect Home	18.17											
II. *Food* :	12. Food	38.10	35.04	36.14	39.11	36.05	31.77	32.84	33.29	28.17	34.16	38.14	39.72
III. *Family* :	13. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00
	14. Accident Insurance		20.00										
	15. Health	3.10	2.05	1.15	.85	6.10	26.14	25.23	5.84	4.00	3.22	1.50	2.00
	16. Incidentals	2.10	1.90	11.40	2.10	1.75	2.30	1.52	.87	2.15	1.40	.75	3.20
	17. Education	3.75	.75	1.10	.75	.75	.75	.75	4.75	1.75	2.70	.75	1.50
	18. Recreation	1.50	.20	.40	3.00	1.50	.50	.55	2.10	25.00	3.10	1.50	2.40
IV. *Religion* :	19. Church and Charity	1.50	1.50	1.50	6.50	1.50	1.50	1.50	1.50	1.50	1.50	4.50	1.50
V. *Personal* :	20. Clothing	12.20	9.40	12.90	21.15	31.10	11.92	4.50	40.10	20.04	11.40	31.10	32.60
	21. Pocket Money	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings* :	22. Savings Bank												
	23. Life Insurance	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $100.   Boarder, $27.50 a month, except during August.

PROBLEM. — Find cash balance at end of year.

CHILDREN'S ACCOUNTS

When the Woodward children were born, their grandparents deposited $5 in the bank for each of them. On each succeeding birthday they deposited $1 for each of them, with interest at 4 % per annum.

In April, 1912, Roland Woodward started keeping Belgian hares, on which he made a profit of $2 a year. During 1913, he received $11.25 for cutting lawns and $13 for running errands, and deposited $15 in the bank July 1. On his eleventh birthday, he drew out of the bank $22 for a bicycle.

PROBLEM 1. — Complete the following table to find how much money he had in the bank by Jan. 1, 1915. (Disregard interest less than 1 cent.)

BANK ACCOUNT OF ROLAND WOODWARD

DATE	DEPOSIT		TIME TO INTEREST	CORRESPONDING DEPOSIT FOR 1 MONTH	BALANCE IN BANK
Oct. 30, 1903		$5.00	8 mo.	40	$5.00
July 1, 1904	Int. (on $40 for 1 mo.)	.13			5.13
July 1, 1904	Bal. $5		6 "	30	
Oct. 20, 1904		1.00	8 "	8	6.13
Jan. 1, 1905	Int. (on $30 for 1 mo.)	.10			6.23
Jan. 1, 1905	Bal. $6		6 "	44	
July 1, 1905	Int. (on $44 for 1 mo.)	.14			6.37
Oct. 30, 1905		1.00	8 "	8	7.37

PROBLEM 2. — After buying his bicycle, Roland worked on a paper route for $1\frac{1}{4}$ hours a day, Sundays excepted, and earned $7 a month. With this money, he clothed himself, paid for his school books, incidental expenses, and bicycle repairs.

Make a reasonable estimate of his expenses for one year, and work out a detailed account of his receipts and expenses during the month of May. Compare this account with your own expenses for one month.

PROBLEM 3. — Complete a table similar to the preceding, to find how much money Frances and Bertha Woodward had by Jan. 1, 1915.

PROBLEM 4. — On Frances Woodward's seventh birthday, her father promised to give her each week as much pocket money as she earned from her garden, if she would keep accounts. On May 1, her balance on hand was 80 ¢. She bought seed for 10 ¢, sold during the week, lettuce, radishes, beets, and beans for 30 ¢; May 8, received pocket money, 20 ¢, and bought second-hand roller skates for $1. Write her expense account, explain how much pocket money her father paid her during that week, and find her cash balance.

PROBLEM 5. — The following items represent Frances Woodward's personal expenses during four months. Classify them under the following heads, and find the total expenditure in each : Clothing, living expenses, recreation, school, luxuries.

Bicycle tire, $2; shoe repairs, 95 ¢; moving pictures (David Copperfield), 10 ¢; scratch paper, 5 ¢; ruler, 5 ¢; shoes, $3.50; rubbers, 75 ¢; waist, 95 ¢; dress material, $4; dress pattern, 15 ¢; thread, 10 ¢; picture frame, 40 ¢; *Youth's Companion*, $1.03; *unaccounted*, 33 ¢; paper, 10 ¢; candy, 5 ¢; pitcher, 80 ¢; Sunday school, 5 ¢; outing flannel, 30 ¢; birthday present, 25 ¢; fare, $1.45; sweater, $5; lunch, 24 ¢; circus, $1; *unaccounted*, 10 ¢; two erasers, 10 ¢; toothbrush, 30 ¢; repairing shoes, $1.50; repairing wheel, 50 ¢; stickers, 10 ¢; class assessment, 15 ¢; Sunday school, 5 ¢; birthday, 25 ¢; comb, 50 ¢; puncture, 25 ¢; spelling blanks, 5 ¢; exercise

book, 10¢; Peter Pan, $1.50; traveling expenses, $1.25; hat, 50¢; picnic, 15¢; envelopes, 10¢; stamp catalogue, 50¢; stamp album, $1.28; souvenir postals, 25¢; shoe polish, 10¢.

PROBLEM 6. — Frances paid the bill for her sweater and then lost the receipted bill, so that she had to pay the bill again. What banking method would have rendered this unnecessary?

COST OF A CHILD DURING ONE TERM OF SCHOOL

The expenses of a family may be classified under four heads: Household expenses, food, and family and personal expenses. In a certain family of two parents and three children, to find the actual cost of one twelve-year-old child, the family considered that the child cost the following fraction of the whole expense for a term of five months: Household expenses, one-fifth of the whole; food, one-fourth; family expenses, one-sixth. At this rate the cost of a child during one term of school was found to be the following: Household, $27.50; food, $50; family expenses, $15; personal expenses, $16.

The same items were added for a class of 40 children, and the average was found to be the following: Household, $18.10; food, $33.65; family expenses, $10.80; personal expenses, $10.40.

PROBLEM 1. — Find the total expense of the child mentioned above for one term. How much would it cost his parents if he should fail to be promoted?

PROBLEM 2. — Find the total expenditure of his family for household, family, and personal expenses, and food for five months and for one year.

PROBLEM 3. — How much more did the above child cost than the average in his class?

PROBLEM 4. — How much do you cost your parents during one term of school? What fraction is this of their income?

LIFE INSURANCE

Assessment or Fraternal Insurance Societies

When Mr. Woodward wished to insure his life, he found that there were two kinds of insurance offered to him.   He could insure either in a fraternal society or in a life insurance company which had a " legal reserve."   He examined each kind and found that the assessment societies gave initiations, titles, uniforms, and social gatherings, but that their insurance was so unsafe that the average life of these societies is only twenty-six years, after which they come to grief. Such a society is usually formed by young men who pay a small assessment in the beginning and do not realize that there is not enough money in reserve in the company to meet the increasing death rate.   As these young men grow older, there are more death losses to be paid than formerly, and therefore their assessments must be increased.   As the number of deaths increases with advancing years, the assessments become unduly heavy, until many members are obliged to drop out and lose all the money that they have paid and all protection for their families.   Young men will not join such a company at this stage on account of the heavy assessments, so that its final failure is only a matter of time.   Mr. Woodward found in the New York magazine, *The Spectator*, for Sept. 18, 1913, the financial standing of several fraternal orders.   Here he found that the cost of insurance to each member was sometimes more than doubled in twenty years !   He therefore knew that he could not afford to join a fraternal order ; especially when he learned that the company reserves the right to change the conditions under which death benefits are paid, because the assessments collected are not usually sufficient to pay the current death loss.   He learned later that the organization of assessment insurance societies has been prohibited in many states.

Problems on Assessment or Fraternal Insurance

1. If 1000 men aged twenty-five decided to form an assessment insurance society and insure their lives for $1000 each, how much must be paid altogether in death benefits? If 9 men died during the first year, how much must be paid in death claims at this time? How many men are left to pay this assessment?

2. If at the beginning of the second year 991 men pay an assessment of $9.08, how much money does the company receive? If 9 men died during the second year, how much must the company pay in death losses? How many men are left to pay assessments at the beginning of the third year?

3. If at the beginning of the thirtieth year the association contains only 490 members and none have dropped out by letting their payments lapse, how many have died?

4. If 29 members die during the thirtieth year, how much must be paid in death losses at the end of this year? How many people are left to pay this assessment? How much must each man pay? Why do members drop out in increasing numbers as the society grows older?

5. The following annual assessments were actually paid for $1000 protection in a fraternal society; this, however, is an exceptional case.

1st	2d	3rd	4th	5th	6th	7th	8th	9th	10th
$10	34.50	24.00	22.00	34.50	37.00	52.00	59.50	82.00	99.50

11th	12th	13th	14th	15th	16th	17th	18th	19th
$112.00	99.50	114.50	129.50	129.50	147.50	164.50	194.50	204.90

a. Find how much was paid to obtain a protection of $1000.

b. How much was the overcharge?

This company failed before the member died. Why was he unable to insure in another company? How much money did he lose?

6. Explain from the preceding table the reasons for the following statement based on the results of experience: "Assessment and fraternal orders prosper in the earlier years, when deaths are few and assessments consequently low. All begin to lose members as the deaths and assessments increase. Men will not pay these largely increased payments in the later years. Consequently they retire and the assessment schemes collapse."

7. How much protection does a man obtain for his family if he insures in a society whose assessments become so high that he cannot pay them? How much protection does he obtain if the company collapses?

Legal Reserve Insurance Companies

Having learned the folly of trying to obtain protection for his family by paying assessments in a fraternal insurance society, Mr. Woodward determined to investigate the legal reserve insurance companies. He discovered that the exposure of corrupt insurance methods practised by a few New York companies in 1906 resulted in laws which became effective in the state of New York, Jan. 1, 1907. These laws standardized the contract or form of policy which the company makes with any one in the United States who insures with them. He found, however, that because the United States does not regulate or demand uniform charters for life insurance for all companies, it is possible for them to operate under different laws in different states. When New York regulated its life insurance companies in 1907, some companies left the state because they did not wish their investments so carefully controlled ! Mr. Woodward learned therefore that the safest life insurance companies to invest in are those which operate

at the present time in the states of New York, Connecticut, Massachusetts, and New Jersey, because there the laws of the states exert control over the funds of the company to insure safety to the policy holder. He therefore investigated such companies to find how their principles made their protection safer than that offered by the assessment insurance societies. He found that the legal reserve insurance companies were based on the principle of reserving part of the money paid in by each policy holder, to be stored up as an additional safeguard so that his family will receive protection when he dies : hence the name "legal reserve insurance company."

8. Tables have been made based on a large range of statistics which show the number of deaths a year. Thus, if there are 100,000 children in the United States at the age of ten whose record is kept, it will be found that during their 20th year of age 723 will have died; during their 30th year 720 will have died; during their 40th year 765 will have died, etc. There is a mathematical law governing these records which is so accurate that it can be used by in- surance companies in determining the death claims that they will have to pay each year.

In a legal reserve insurance company, the amount needed to pay death claims for each year is calculated with exactness from these mathematical tables, and the money needed by the company for this purpose is collected from its policy holders, who pay it as part of their annual "premiums." Further information concerning legal reserve may be obtained from the state in- surance commissioner.

QUESTIONS. Mr. Woodward was married at the age of twenty-five and insured his life at that time for $1000. In 1904, when he was earning a larger salary, he insured his life for $1000 additional, for which he had to pay a higher rate because he was now three years older.

1. How much did Mr. Woodward pay for his life insurance in 1901 ?

2. If he had died during August of that year, how much would his widow have received?

3. How much would the family have profited from the insurance company?

4. When did Mr. Woodward increase the amount of life insurance he was carrying?   How much did he pay a year for the second $1000 policy?

5. How much would his estate receive from the insurance company if Mr. Woodward died in 1904?

Problems on Legal Reserve Insurance

PROBLEM 1. — If 1000 men aged 25 decide to form a legal reserve insurance company and insure their lives for $1000 each, if they each pay a $24 premium in advance each year, how much money does the company receive at the beginning of the first year?   If this money is invested at 3%, how much money does the company control at the end of the first year?   If nine men died at the end of the first year, how much must be paid in death claims at this time?

PROBLEM 2. — a.   If the *expenses* for running the company average $3.05 per member, how much money remains with the company at the end of the first year?

b. If the surplus (explained later) to be returned to each member averages $3.33 per member, how much money is left with the company?

It is evident that at the end of the first year, the company holds in reserve a much larger sum of money than was needed to pay the death claims and other expenses for the year.   It is this reserve which gives stability to the legal reserve insurance companies.

If no new members joined after the first year it is evident that the amount of reserve paid in each year would decrease as the number of members decreases, yet there would still be enough funds to pay the death claims of the last survivor.   This is true because the amount of the re-

serve and the interest it will earn are calculated with exactness to protect each member, and are included as part of the premium paid each year. These calculations are based upon tables called " American mortality tables," showing the death rate per year.

Companies of course are not formed under exactly these conditions, but the principle of the legal reserve is the same as in the preceding, and explains why it is practically impossible for a legal reserve insurance company to fail after once being well established.

PROBLEM 3. — At the age of 25 the mortality tables show that the average number of years remaining in a man's life is 39. If he insures at this time the reserve set apart from his premium must be sufficiently large so that at the end of 39 years it will accumulate $1000.

Tables show that if $12.25 is invested annually at 3 % it will accumulate $1000 in 39 years. If a man insures at the age of 25 and pays a premium of $24, if $12.25 of this premium is reserved to pay his own death claim, how much is left ?

PROBLEM 4. — If a man aged 25 pays a $24 premium each year and $12.25 is set aside out of this premium as a legal reserve to pay his own death claims, if $10 is set aside to pay the death claims of those who have died during the year, the remainder of the premium is devoted to current expenses. How much will this be ?

There are three items which vary so that the insurance company unintentionally overcharges the policy holder and accumulates a *surplus*. The three items which help to accumulate the surplus arise from the following :

1. Not so many people die as are allowed for in the tables, except in cases of epidemic. Careful medical examinations bar out those people below the standard which a legal reserve company considers a safe risk.

2. The company may invest its premiums at a higher rate of interest than 3 %, the usual reserve interest rate. The earnings above 3 % are put into the surplus.

3. The estimated expenses of the company may be higher than the actual expenses. (This item was not considered in the preceding table.)

If the policy holder buys a *participating* policy, or a policy which participates in the surplus earnings of the company, his share of this surplus is returned to him annually or else is invested by the company so as to bring him increased insurance. This return of the surplus to the policy holders each year is the distinguishing feature of a strictly *mutual* company.

Mr. Woodward found that he must decide between buying a *participating* or *non-participating* policy. In the former case, his share of the company's surplus would either be returned to him each year or credited to his account by the company to buy him additional insurance. If he bought a *non-participating* policy, he would have no surplus returned to him.

At the age of twenty-five, for a participating policy he must pay $20.14; for a non-participating policy he must pay $16.36. It therefore became a question of paying a higher premium and getting the money back later in the form of surplus (sometimes called *dividends*) or paying a lower premium and getting no money returned except $1000 at death. Mr. Woodward decided to buy the participating policy, because this would compel him to pay more money for his insurance and thus build up a surplus for him in the company upon which he could draw in time of need or which he could use to purchase additional insurance. He knew that if he bought the lower-priced non-participating policy, that the money that he saved here would be spent on minor items in the family budget and that there would be nothing to show for it.

The surplus that was returned to him on the policy that he took out at 25 years of age increased from year to year, as shown in the first of the following tables. At the age of twenty-

seven he took out a second participating policy for $1000. This policy also returned an annual surplus or dividend as shown in the second table.

In January, 1913, when Mr. Woodward was 37 years of age, he was obliged to withdraw $60 from the dividends that had been accumulating with the company in order to meet expenses.

PROBLEM 5. — Find the amount which was due Mr. Woodward as his share of the surplus on each of his policies when he withdrew from his surplus on January 1, 1913.

	END OF YEAR	SURPLUS RETURNED		END OF YEAR	SURPLUS RETURNED
Age 26	1	$3.33	Age 28	1	$3.48
	2	3.48		2	3.65
	3	3.64		3	3.83
	4	3.79		4	4.00
	5	3.95		5	4.18
	6	4.12		6	4.37
	7	4.30	Age 35	7	4.58
	8	4.48		8	4.78
	9	4.66	Jan. 1, 1913	9	4.99
Age 35	10	4.86			
	11	5.05			
Jan. 1, 1913	12	5.27			

PROBLEM 6. — If a man aged 35 insures in a legal reserve company and takes out a non-participating policy, he pays $18.50 annually for $1000 protection. If he takes out a participating policy, he pays $26.35 annually and receives surplus as follows:

1st year	2d	3d	4th	5th	6th	7th	8th	9th	10th
$ 3.95	4.17	4.42	4.66	4.91	5.18	5.45	5.73	6.02	6.32
11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
$ 6.63	6.96	7.30	7.65	8.01	8.40	8.79	9.21	9.63	10.06

Show the difference in cost to the policy holder between buying a non-participating policy at a lower annual premium and a participating policy at a higher annual premium and receiving surplus each year for the latter, during a period of twenty years.

Twenty-Year Endowment Policies

Some of his friends advised Mr. Woodward to buy a 20-*year endowment policy* which could be withdrawn at the end of 20 years or else allowed to stay with the company and afford protection to his family without his paying any premium after the first 20.   He found, however, that he was not able to afford the higher premium.

PROBLEM 7. — At the age of 25, the annual premium for an ordinary life insurance policy is $ 20.14, and for a twenty-year endowment policy $ 48.03.   At the age of 28 the ordinary life insurance cost $ 21.69, and the twenty-year endowment cost $ 48.41.   How much more would Mr. Woodward have had to pay annually for his two policies if he had bought twenty-year endowment policies than if he had bought ordinary life policies ?

It often happens that after a man has been working 15 or 20 years, he is earning a salary large enough that he wishes to change his ordinary life insurance policy to a twenty-year endowment policy.   This he can do by paying the difference between the premiums for the two kinds of policy from the time he started to insure his life.

FAMILY EXPENSE ACCOUNT
FOURTEENTH YEAR — 1914

		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
I. *Household:*	1. House and Lot	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
	2. Taxes				23.39							22.51	
	3. Water	1.55	1.50	1.65	1.70	1.80	2.05	2.00	2.15	2.10	1.90	1.60	1.50
	4. Electric Light	2.91	2.84	1.95	1.72	1.81	1.60	1.40	1.50	1.84	1.91	2.05	2.10
	5. Gas	3.10	3.15	3.10	3.05	3.20	3.15	3.10	3.50	3.05	3.10	3.15	3.40
	6. Fuel	5.00						15.00					
	7. Garbage	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
	8. Help	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	2.10	4.20	4.20	4.20
	9. Laundry	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
	10. Furnishings	.20	2.10	1.40	5.90	2.40	3.10	2.40	1.10	8.50	3.40	1.10	12.80
	11. Insurance to protect Home	16.50											
	12. Fire Insurance	10.50											
II. *Food:*	13. Food	42.10	43.04	41.37	39.18	41.19	35.14	32.17	29.15	38.17	39.18	41.55	42.41
III. *Family:*	14. Carfare (to San Francisco)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00
	15. Accident Insurance		20.00										
	16. Health	.42	.49	6.17	3.10	4.40	.14	.84	1.17	7.90	8.40	1.10	.74
	17. Incidentals	2.10	1.15	3.15	1.40	6.11	7.14	2.42	3.17	4.10	2.05	1.17	1.42
	18. Education	3.75	.75	.75	2.75	.75	.75	.75	4.74	4.75	.75	.75	1.75
	19. Recreation	.20	.20	2.00	.80	2.50	1.10	4.00	20.00	2.10	2.50	1.10	1.45
IV. *Religion:*	20. Church and Charity	1.50	1.50	1.50	6.50	1.50	1.50	1.50	1.50	1.50	1.50	4.50	1.50
V. *Personal:*	21. Clothing	2.10	3.05	21.17	14.11	22.04	14.71	32.15	10.19	11.14	37.49	12.40	11.80
	22. Pocket Money	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
VI. *Savings:*	23. Savings Bank												
	24. Life Insurance	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49

Salary, $ 100. Boarder, $ 27.50 a month, except during July.

PROBLEM. — Find the expenses and income for each month. Place in the savings bank as much as possible.

LUXURY *VERSUS* CHARITY

When they considered how much they should give for the support of church and charity, Mr. and Mrs. Woodward realized that they preferred to live in a city where there was the influence of the church, rather than in one where there was no such help. They saw therefore that a church can exist only as the citizens support it and that they must do their share.

On account of the high cost of the necessities of life, they saw that if they gave to the church only what was left after paying the month's bills, their money would be spent in other ways instead. They therefore planned to set aside a definite sum each month for the support of the church and to consider it as a necessary expense.

When they discussed the subject of charity, they realized that if they gave indiscriminately to those of the needy whom they happened to meet, there would be no money remaining for the support of widows and orphans and the worthy poor. They decided, therefore, to contribute to a few worthy causes which would use the money wisely for the good of others.

For some time the problem of the amount of money that they should devote to charity remained unsolved. Finally, they decided that sometimes they indulged in extravagant purchases, which were not necessary or helpful to the standard of life that they were maintaining. It seemed only reasonable, therefore, that they ought to be able to give away, for the benefit of others, as much money as they devoted to their own luxury. This rule they adhered to with very fair regularity. When money was spent for gum, ice cream sodas, unnecessarily expensive clothing, etc., etc., a corresponding amount was placed in the charity bank at home and emptied twice a year on Charity Day and at Thanksgiving time.

The question of what was a reasonable expenditure for self-improvement, and what was luxury, showed that a vacation was often a necessity for the health and spirits of the family,

but that certain thoughtless expenditures while on the vacation, and at other times, contributed nothing to the improvement of the family, but were mere extravagances. The same logic applied to various expenditures for clothing, entertaining, food between meals, and other minor expenses. As the family came to consider their expenditure for these items in relation to what they might give for the benefit of those less fortunate than themselves, they began to realize that there is a certain responsibility attached to spending money. They saw that the habit of halving the amount spent on extravagance, in order to devote the other half to charity, not only increased their self-respect, and helped the community, but also gave them a self-control in money matters which stood them in good stead in case of emergencies.

PROBLEM 1. — How much did the Woodward family devote to church and charity each year?

PROBLEM 2. — How much could be accomplished with such an amount of money? To answer this question, consult the reports of the charity organization and of a church to see the amount actually spent to maintain the high standard of ideals in the community.

PROBLEM 3. — How much money did you spend on luxuries during the last month? If you spent half this amount upon yourself and the other half for church and charity, to what objects would you devote it?

PROBLEM 4. — Keep a record of your personal expenses month by month and see how this rule works in your own case.

PROBLEM 5. — Find the amount spent by some family during one year upon luxury, and compare it with the amount given to church and charity. Explain why, as families become very wealthy, they should devote more money to the benefit of others than to unnecessary expenses for themselves.

THE OUTLOOK FOR THE FUTURE

By January, 1915, Mr. and Mrs. Frank Woodward had been married fourteen years. They knew that in a very short time their home would be their own. They knew also that although their cash reserve against emergencies had not yet regained the standard which they tried to maintain, they were protected by several forms of insurance.

1. *Fire Insurance.* — The house was protected in case of fire.

2. *Debt on Home.* — The note at the bank was protected by a 5-year renewable and convertible term policy in case of Mr. Woodward's death. This insurance would naturally cease when the house was paid for, but the policy could be continued to cover the children's education and other coming expenses.

3. *Accident Insurance.* — The family was protected by an accident policy which guaranteed $20 a week if accident disabled the breadwinner and $4000 in the event of death by accident.

4. *Accident Insurance.* — In January, 1914, the new compensation law went into effect in California. According to the provisions of this act, if Mr. Woodward was hurt while working for the hardware store, his employer would have to pay all his hospital expenses during the first two weeks, and 65% of his wages during the next four years if he was so disabled that he could not return to work. In case of his death by accident, the company would pay three times his annual wage.

5. *Life Insurance.* — At the time of his death, the life insurance company would pay his widow the face of the life insurance policy, $2000.

In the event of Mr. Woodward's death, the 5-year renewable term policy would bring in $1500 to be paid on the debt on the house and thus give Mrs. Woodward a home almost free

from mortgage. The life insurance of $2000 would also become due, but the policy was so arranged that the insurance company would invest the money at 5 % and pay the widow or her heirs a monthly income of $8.33. How is this amount determined?

In case of death by accident an additional $4000 would fall due, which was also arranged to be invested at 5 % and the income paid monthly. How much would the widow receive each month? In case of death by accident while working in the store, the employer must pay three times the annual wage. How much monthly income would this bring in?

Such arrangements for investing the face of the policy and paying the interest in monthly instalments secured Mrs. Woodward against improper investment of funds. The records show that money paid in death claims is usually dissipated within five years.

Another source of protection came from the increasing value of the land upon which the house was built. The lot could have been sold for many times its original value, but the difficulty of finding another lot which could be bought at a moderate price and in a convenient location prevented the sale.

The family realized that, although they had little ready money, they had a sense of security concerning the future which made them satisfied to get ahead slowly.

It must be borne in mind that this family had a larger income than most in this country. Mr. Woodward was receiving $100 a month, yet the family were obliged to live carefully to keep within this income. Recent statistics show, however, that the average salary earned throughout the United States is less than $700 a year.

PROBLEM 1. — Find the time when the mortgage will be paid off.

PROBLEM 2. — Find the balance in the savings bank.

Six Per Cent Interest Table

$	1 da.	2 da.	3 da.	5 da.	6 da.	10 da.	15 da.	1 mo.	2 mo.	3 mo.	4 mo.	5 mo.	6 mo.	7 mo.	8 mo.	9 mo.	10 mo.	11 mo.	1 yr.	2 yr.	3 yr.	$
1	$.000\frac{1}{6}$	$.000\frac{1}{3}$	$.000\frac{1}{2}$	$.000\frac{5}{6}$	.001	$.001\frac{2}{3}$	$.002\frac{1}{2}$	**.005**	.01	.015	.02	.025	.03	.035	.04	.045	.05	.055	**.06**	.12	.18	1
2	$.000\frac{1}{3}$	$.000\frac{2}{3}$	.001	$.001\frac{2}{3}$	.002	$.003\frac{1}{3}$	.005	**.01**	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	**.12**	.24	.36	2
3	$.000\frac{1}{2}$	.001	$.001\frac{1}{2}$	$.002\frac{1}{2}$	.003	.005	$.007\frac{1}{2}$	**.015**	.03	.045	.06	.075	.09	.105	.12	.135	.15	.165	**.18**	.36	.54	3
4	$.000\frac{2}{3}$	$.001\frac{1}{3}$	.002	$.003\frac{1}{3}$	.004	$.006\frac{2}{3}$	.01	**.02**	.04	.06	.08	.10	.12	.14	.16	.18	.20	.22	**.24**	.48	.72	4
5	$.000\frac{5}{6}$	$.001\frac{2}{3}$	$.002\frac{1}{2}$	$.004\frac{1}{6}$	.005	$.008\frac{1}{3}$	$.012\frac{1}{2}$	**.025**	.05	.075	.10	.125	.15	.175	.20	.225	.25	.275	**.30**	60	.90	5
6	.001	.002	.003	.005	.006	.01	.015	**.03**	.06	.09	.12	.15	.18	.21	.24	.27	.30	.33	**.36**	72	1.08	6
7	$.001\frac{1}{6}$	$.002\frac{1}{3}$	$.003\frac{1}{2}$	$.005\frac{5}{6}$	.007	$.011\frac{2}{3}$	$.017\frac{1}{2}$	**.035**	.07	.105	.14	.175	.21	.245	.28	.315	.35	.385	**.42**	.84	1.26	7
8	$.001\frac{1}{3}$	$.002\frac{2}{3}$	.004	$.006\frac{2}{3}$	.008	$.013\frac{1}{3}$	.02	**.04**	.08	.12	.16	.20	.24	.28	.32	.36	.40	.44	**.48**	.96	1.44	8
9	$.001^2$	.003	$.004\frac{1}{2}$	$.007\frac{1}{3}$	.009	.015	$.022\frac{1}{2}$	**.045**	.09	.135	.18	.225	.27	.315	.36	.405	.45	.495	**.54**	1.08	1.62	9
10	$.001\frac{2}{3}$	$.003\frac{1}{3}$	.005	$.008\frac{1}{3}$	.01	$.016\frac{2}{3}$	.025	**.05**	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	**.60**	1.20	1.80	10
$	1	2	3	5	6	10	15	1	2	3	4	5	6	7	8	9	10	11	1	2	3	$
	DAYS							MONTHS											YEARS			

THE USE OF INTEREST TABLES

Banks are in the habit of using interest tables such like the preceding for the purpose of computing interest quickly. It is impossible to use these tables without understanding how to compute simple interest. After having learned this, the table saves so much time that it is worth mastering. This table is a shorter form of the interest tables commonly used in banks.

Formation of Tables

After noticing the arrangement of the completed table, each pupil will show his own power by filling out the blank form at the end of the book and thus make his own table. To fill out the table with greatest economy, work the following problems in order.

PROBLEM 1. — Calculate the interest on $1 for one year at 6%, on $2 for one year, on $3, etc., up to $10 for one year. Similarly for two years and three years. Keep these results on scratch paper until verified. Enter them on the three right-hand columns on the blank table at the end of the book, insisting that a very fine pen be used, also clear, small, legible figures. Insist also that the decimal points be kept under each other in column, and guard against a favorite error of adding a zero in the mills place.

PROBLEM 2. — Use the interest for one year as a basis for computing interest for one month, by dividing each amount by twelve. Get the interest for two months by dividing the interest for a year by six, for three months by dividing the interest for a year by four. Check these results by seeing whether the interest for two months is twice the interest for one month, three months' interest is three times one month, etc. Copy these columns carefully into the table. The decimal point can come at the extreme left of the allotted space. Express mills as decimals, but fractions of mills as common fractions.

PROBLEM 3. — Complete columns for five, seven, eight, nine, ten, and eleven months by multiplying the interest for one month by five, seven, and eight, etc. Check by noticing whether the interest for five months is equal to the sum of the interest for one month and four months, etc., copying these results accurately on the table.

PROBLEM 4. — Practice from the tables such problems as the following: (a) Find the interest on $50 for 2 months @ 6%. (b) Find on the card the interest on $5 for 2 months. Since the interest on $5 for 2 months is 5¢, the interest on $50 for 2 months is ten times the interest on $5, or 50¢, or "point five zero."

NOTE. — It is necessary to insist upon *reading* money by decimals, in order to make work absolutely reliable in later years. No error is more prevalent than failure to multiply correctly by ten and one hundred in reading and writing amounts of money.

NOTE 2. — In practicing reading from the table, use the printed table. Hold it in the left hand, do not leave it lying on the desk. Use a strip of blank card or paper in the right hand to cover the numbers not needed and thus insist on finding the numbers desired.

PROBLEM 5. — Find the interest on $860 for 6 months @ 6%.

Use the interest table to show the following:

The interest on $8 for 6 mo. is $.24,

therefore   the interest on $800 for 6 mo. is $24.

Read this result at sight. Use no scratch work.

The interest on $6 for 6 mo. is $.18,

therefore   the interest on $60 for 6 mo. is $1.80.   Explain.

These results should be written as follows:

Interest on $800 for 6 mo. is $24
Interest on $60 for 6 mo. is $1.80
Interest on $860 for 6 mo. is $26.80

PROBLEM 6. — After thoroughly training in handling problems from the table, the following form may be used to advantage. Find the interest on $970 for six years four months.

PRIN.	TIME	INTEREST
900	6 yr.	$324
900	2 mos.	9
70	6 yr.	25.20
70	2 mos.	.70
		Total $358.90

PROBLEMS IN INTEREST, USING TABLE

Use the printed table to find the interest in each of the following problems. Hold the table in the left hand and write nothing except the amount of interest, as in the last column of Problem 6 preceding. Train yourself to multiply by 10, 100, and 1000 on sight and waste no time and energy in unnecessary movements. Hold the table close to the writing so that the head need not turn from one to the other.

Find the interest at 6 % per annum on the following :

1. $420 for 3 yr.
2. $640 for 1 yr. 2 mo.
3. $320 for 3 yr. 1 mo.
4. $32 for 6 yr. 8 mo.
5. $3200 for 6 yr. 8 mo.
6. $4001 for 2 yr. 8 mo.
7. $3375 for 4 yr. 5 mo.
8. $871 for 9 yr. 4 mo.
9. $8070 for 7 yr. 7 mo.
10. $9006 for 8 yr. 3 mo.

Interest at 6 % may be used as the basis for computing interest at other rates.   Thus:

3% is $\frac{1}{2}$ of 6%, therefore divide amt. in table by 2.   Why?
2% is $\frac{1}{3}$ of 6%, therefore divide amt. in table by 3.   Explain.
1% is $\frac{1}{6}$ of 6%, therefore divide amt. in table by 6.
4% is 6% less 2%, therefore subtract 2% from 6%.
5% is 6% less 1%, therefore subtract 1% from 5%.
7% is 6% plus 1%, therefore add 1% to 6%.

11. Explain the following, using the printed table.

PRIN.	TIME	INTEREST
900	6 yr.	$334
900	2 mo.	9
70	6 yr.	25.20
70	2 mo.	.70
		$358.90 Int. at 6 %
		$119.633 $\frac{1}{3}$ Int. at 2 %
		$478.533 $\frac{1}{3}$ Int. at 8 %

12. Explain how to find interest at 9 % from the table.   Find the interest on the following :

13. $879 for 3 yr. 5 mo. at 7 %

14. $672 for 2 yr. 3 mo. at 2 %

15. $801 for 4 yr. 1 mo. at 5 %

16. $8009 for 7 yr. 11 mo. at 8 %

17. $642 for 5 yr. at 4 %

18. $803 for 7 mo. at 1 %

19. $810 for 13 yr. at 3 %

20. $19 for 5 yr 4 mo. at 9 %

COMPLETION OF 6% INTEREST TABLE FOR DAYS

Compute mentally the interest on $1, $2, up to $10, for one year and then for one month. The interest for fifteen days will be one-half of one month. By this means the column for fifteen days may be computed, and since some of the squares require space for a point and four figures, it should be written in columns very accurately, decimal points exactly under each other, and with small clear figures. The columns headed "ten days" may be obtained from the column for one month by dividing each number by three. Use common fractions only in the fourth place from the decimal point.

Interest on $1 for 1 mo. is $.005 or 5 mills. Interest on $1 for 10 da. is $\frac{\$.005}{3}$ or $.001⅔, or 1⅔ mills.

PROBLEM 1. — Read the interest for 10 days on $2, $3 . . . $10 in the same manner and write in column.

PROBLEM 2. — Complete the column headed 15 days by calculating from the column headed 1 month. How is this done? Read each result as cents, mills, and fractions of a mill.

PROBLEM 3. — Complete the column headed 5 days by calculating from the column headed 10 days. How? Read results in terms of money.

PROBLEM 4. — Verify the accuracy of these columns by seeing whether the 10-day column is twice the 5-day column, and whether the 15-day column is three times the 5-day column.

PROBLEM 5. — Complete the 1-day column by dividing the 5-day column by 5. Verify by seeing whether 10 times the 1-day column gives the 10-day column. Read results in terms of money.

PROBLEM 6. — Complete the 6-day column by adding the 1-day and 5-day columns. Verify by seeing whether the result is $\frac{1}{5}$ of the column headed 1 month. Explain why this should be so.

PROBLEM 7. — Complete the 2-day column from the 1-day column. How? Verify from the 6-day column. How?

PROBLEM 8. — Complete the 3-day column by adding the 1-day and 2-day columns. Verify from the 6-day column. How? Read each result as mills and fractions of mills.

PROBLEMS IN INTEREST, USING TABLES

Find the interest at 6 % per annum on the following:

1. $30 for 3 yr. 11 mo. 6 da.

2. $7 for 3 yr. 11 mo. 6 da.

3. $731 for 3 yr. 11 mo. 6 da.

4. $841 for 2 yr. 5 mo. 3 da.

5. $941 for 4 yr. 5 da.

6. $82 for 6 yr. 1 mo. 1 da.

7. $709 for 1 yr. 5 mo. 2 da.

8. $82 for 5 yr. 4 mo. 7 da.

9. Find the rate of interest on savings and calculate the interest on a deposit of $756 for 5 yr. 4 mo., using tables. Consult bankers for short methods.

10. A loan of $741 at 8 % extended for 7 years 5 months 11 days. How much interest was due?

11. Find the rates of interest paid by investments considered " safe " by reliable business men. Form reasonable problems and find how much money the investment will pay in 1 year. Consider also Postal Savings Bank investments.

Name_____   **Blank for Family Expense Account**   Date_____

YEAR, JAN. 191— TO JAN. 191—

	JAN.	FEB.	MAR.	APR.	MAY.	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
I. *Household:* 1. House and Lot													
2. Taxes													
3. Water													
4. Electric Light													
5. Gas													
6. Fuel													
7. Garbage													
8. Help													
9. Laundry													
10. Furnishings													
11. Insurance against debt													
II. *Food:* 12. Meat													
13. Butter and Milk													
14. Fruit and Vegetables													
15. Eggs													
16. Groceries													
III. *Family:* 17. Carfare (Commute)													
18. Accident Insurance													
19. Health													
20. Incidentals													
21. Education													
22. Recreation													
IV. *Religion:* 23. Church and Charity													
V. *Personal:* 24. Clothing													
25. Pocket Money													
VI. *Savings:* 26. Savings Bank													
27. Life Insurance													
Totals													

		JAN.	FEB.	MAR.	APR.	MAY.	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
I. *Household:*	1. House and Lot													
	2. Taxes													
	3. Water													
	4. Electric Light													
	5. Gas													
	6. Fuel													
	7. Garbage													
	8. Help													
	9. Laundry													
	10. Furnishings													
	11. Insurance against debt													
II. *Food:*	12. Meat													
	13. Butter and Milk													
	14. Fruit and Vegetables													
	15. Eggs													
	16. Groceries													
III. *Family:*	17. Carfare (Commute)													
	18. Accident Insurance													
	19. Health													
	20. Incidentals													
	21. Education													
	22. Recreation													
IV. *Religion:*	23. Church and Charity													
V. *Personal:*	24. Clothing													
	25. Pocket Money													
VI. *Savings:*	26. Savings Bank													
	27. Life Insurance													
	Totals													

DATE	PARTICULARS	RECEIVED		PAID	
Jan. 2					
	Total				
Jan. 3	Cash Balance				
	Total				
Jan. 4	Cash Balance				
	Total				
Jan. 5	Cash Balance				
	Total				
Jan. 6	Cash Balance				
	Total				
Jan. 7	Cash Balance				
	Total				

DATE	PARTICULARS	RECEIVED		PAID	
Jan. 2					
	Total				
Jan. 3	Cash Balance				
	Total				
Jan. 4	Cash Balance				
	Total				
Jan. 5	Cash Balance				
	Total				
Jan. 6	Cash Balance				
	Total				
Jan. 7	Cash Balance				
	Total				

Name_____ **Blank for Savings Bank Account** Date:_____

DATE		DEPOSIT						TIME TO INTEREST	CORRESPONDING DEPOSIT FOR 1 MONTH					BALANCE IN BANK				
Month	Year						Cents											Cents

*Name*_____   **Blank for Savings Bank Account**   *Date*_____

Date		Deposit					Cents	Time to Interest	Corresponding Deposit for 1 Month				Balance in Bank				Cents
Month	Year																

Blank for Commercial Bank Account

CHECKS AND STUBS

*Name*_____

*Date*_____

_____ CALIFORNIA

*No.*_____ $_____

_____ 191 ____

*To*_____

*For*_____

	DOLLARS	CENTS
BAL. BROT. FORD.		
AMT. DEPOSITED		
TOTAL		
AMT. THIS CHECK		
BAL. CAR'D FORD.		

BERKELEY, CAL._____191__ No._____

THE NATIONAL BANK OF BERKELEY

PAY TO THE
ORDER OF_____ $_____

_____DOLLARS

_____

*No.*_____ $_____

_____ 191 ____

*To*_____

*For*_____

	DOLLARS	CENTS
BAL. BROT. FORD.		
AMT. DEPOSITED		
TOTAL		
AMT. THIS CHECK		
BAL. CAR'D FORD.		

BERKELEY, CAL._____191__ No._____

THE NATIONAL BANK OF BERKELEY

PAY TO THE
ORDER OF_____ $_____

_____DOLLARS

_____

*Name*_____

Blank for Commercial Bank Account

*Date*_____

CHECKS AND STUBS

*No.*_____*$*_____
_____*191*____

*To*_____
*For*_____

	DOLLARS	CENTS
Bal. brot. ford.		
Amt. Deposited		
Total		
Amt. this check		
Bal. car'd ford.		

BERKELEY, CAL._____191__ No._____

THE NATIONAL BANK OF BERKELEY

PAY TO THE
ORDER OF_____$_____

_____DOLLARS

---

*No.*_____*$*_____
_____*191*____

*To*_____
*For*_____

	DOLLARS	CENTS
Bal. brot. ford.		
Amt. Deposited		
Total		
Amt. this check		
Bal. car'd ford.		

BERKELEY, CAL._____191__ No._____

THE NATIONAL BANK OF BERKELEY

PAY TO THE
ORDER OF_____$_____

_____DOLLARS

Blank for Six Per Cent Interest Table

$	\multicolumn{7}{c}{Days}	\multicolumn{11}{c}{Months}	\multicolumn{3}{c}{Years}	$
	1	2	3	5	6	10	15	1	2	3	4	5	6	7	8	9	10	11	1	2	3	
1																						1
2																						2
3																						3
4																						4
5																						5
6																						6
7																						7
8																						8
9																						9
10																						10
$	1	2	3	5	6	10	15	1	2	3	4	5	6	7	8	9	10	11	1	2	3	$
	\multicolumn{7}{c}{Days}	\multicolumn{11}{c}{Months}	\multicolumn{3}{c}{Years}	

Blank for Payments on House and Lot

Date of Payment	Total Payment		Amount Principal		Amount Interest		Balance Due on Principal	
April 1, '08	$520	00	520	00			2080	00

Blank for Payments on House and Lot

Date of Payment	Total Payment		Amount Principal		Amount Interest		Balance Due on Principal	
April 1, '08	$ 520	00	520	00			2080	00

Blank for Payments on Mortgage

Date	Interest		Paid to	Paid on Principal		Balance Due	
1912			1912			$1430	00
Sept. 1	8	34	*Oct.* 1	11	66	1418	34

Blank for Payments on Mortgage

Date	Interest		Paid to	Paid on Principal		Balance Due	
1912			1912			$1430	00
Sept. 1	8	34	*Oct.* 1	11	66	1418	34